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COMPUTER WEEKLY

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Coping with the information explosion

IT has been estimated in the US that the average executive is presented with a million words to read every day. At 250 words per minute this would take 66 hours daily to get through!

The problem of how to cope with the information explosion and sift through the deluge of words to find those that are indispensable is looming increasingly large in the lives of managers and professionals, and it is this that former Logica marketing consultant Jill Johnson is exploring.

Johnson has founded Mind Management Ltd to start research in this area, to get people to think about their own problems of coping with the flow of information and to get them to decide what it is in it they want and need. She gathers detailed information from her clients about their reading habits.

In all the talk about the paperless office of the future, Johnson asserts, there has been little consideration of how executives select what they need from the enormous flow of information that comes to them every day.

She is talking about newspapers, magazines, published reports, internal reports, memos, mail. It is unrealistic to claim, in her view, that a significant fraction of this material will arrive in electronic form in the foreseeable future, despite such ideas as newspapers on viewdata.

Even if it did, she asks, is it really practicable to absorb this sort of information on a screen? A manager's real flair is in selection, she suggests, and he has to have a very fast way of skimming through large quantities of reading matter to find what is of importance to him. At present he can flip through a newspaper more easily than text on a screen.

The research that psychologists are currently doing into perception and learning is at a much finer level of detail than this, Johnson points out, and is not tackling the broader problem of how one keeps up with developments in one's field.

NEWS IN BRIEF

Temporary chairman

TAKING over as chairman of the Post Office for just one year while it is split in two is robotics expert Sir Henry Chilver, vice-chancellor of Cranfield Institute of Technology since 1970. Existing chairman Sir William Barlow leaves on September 11.

The two new organisations already have chairmen designate. They are George Jefferson for British Telecom and Ron Dearing for the Posts and Giro operation. At the moment Jefferson and Dearing are also deputy chairmen of the Post Office.

40% more power

THE new ICL 2946, revealed last week, comes with up to 4 megabytes of main memory and in addition to DME/2, supports the latest release of VME/K with fully integrated IDMS and TPMS. It offers 40% more power than the 2905.

Edinburgh micro

A MICROCOMPUTER teaching laboratory is to be set up at Edinburgh University in October. It will use a Terak 8510A computer and graphics system supplied by sole UK agent, Dicott Electronics of Basingstoke, Hants. The system is based on a Digital Equipment LSI-11 and will be used for development and evaluation work and promote the use of UCSD Pascal at the university.

Joining Apple

INTEL Europe's vice-president and general manager, Tom Lawrence, has left the company to join Apple Computer in Cupertino.

£1 million backing for Scots 'Nexos'

A JOINT operation by the Scottish Development Agency and two private institutions is to set up a venture in Scotland to manufacture distributed office systems of novel design.

Over £1 million is being invested in the company. Future Technology Systems, which aims to make a range of small business microcomputers which can be linked into a distributed system for data and word processing.

The Scottish Development Agency, the equivalent of the National Enterprise Board in England, is spending £400,000 on the project, while £250,000 each is coming from Scottish Northern Investment Trust and Castle Finance.

The remainder of the money is coming from the firm's three founders, Peter McHugh and David Shear and Professor Martin Henley of University College Cardiff, who is providing the expertise in microelectronics.

The agency has handed over to the firm a new factory in Beith, Ayrshire, where work should start in October in assembling terminals and keyboards of original design. Eventually 140 staff are expected to be employed. First production runs should be in the middle of 1981.

Advanced

Design of the products is already well advanced, with software packages on the stocks for word processing, accounting and sales. Users will be able to program in such standard languages as Basic and Cobol.

The philosophy is that users should be able to start out with a small self-contained machine and then upgrade to a linked system without changing product range. A small central processor will be available for linking the micros and handling central files.

In this sense FTS is aiming down-market from Nexos, the National Enterprise Board's venture which is designing a large scale electronic office system focused more on text handling than data processing.

On the other hand, in so far as Nexos is also selling stand alone word processors, the two ventures will be competing. FTS expects its customers to be firms with up to about 200 employees.

Just one more tug!

JUST one more tug to make sure it is securely packed and this ICL ME29 computer becomes the first to cross the Atlantic to Canada.

Bound in ICL's own top grade polythene, the machine is going to Standard Tube of Woodstock, Ontario. It is to replace IBM System 3 and System 32 processors.

Most ME29 sales so far are for export and ICL has 300 orders in hand. It hopes to be delivering about 80 a month by Christmas.

Row over US mail electronic plans

THE US Postal Service's controversial Electronic Computer-Originated Mail service is now set to go live in January 1982, despite continuing disagreement with various regulatory agencies over the scope of the service and how much competition will be allowed.

The Postal Rate Commission, which oversees the US Post has specified that the service should be experimental, with a finishing date of October 1984, and in protest against this the US Post is appealing to a federal court.

Users of ECOM will be organisations that mail large numbers of invoices and the like that are produced by computer (CW, March 6). The text will be sent electronically to a post office near each recipient where a printout will be made which is delivered by hand in the normal mails. This saves transporting the printout across country.

Whether it will be open to any communications firm to carry the electronic part of the message, or whether the US Post will have strict control over this, is still in doubt.

The Federal Communications Commission has also been trying to exert control over ECOM, in conflict with the Postal Rate Commission.

NAS denies rift over joint Hitachi team

NATIONAL Advanced Systems has denied reports that it had pulled half its people off the joint development team at Hitachi's Tokyo centre where work is being done on NAS' own version of the Hitachi M-200H which is understood to be ready for launching. According to NAS, the joint development team has always been split into two groups because its members are working at two centres, Hitachi's in Tokyo and the NAS centre at Palo Alto, California.

The joint team is primarily concerned with altering Hitachi's mainframes to make them software compatible with IBM systems. The instruction sets of the M-180 and M-200H are somewhat different from IBM's and the input/output protocols are radically different.

The Hitachi machines, as sold in Japan, run under its own operation system, VOS/3 and not under any IBM operating system. Being US-based, NAS can contribute valuable IBM expertise to the modification programme.

NAS admitted to being unhappy at Hitachi's decision to use Olivetti Computers and BASF to sell its big machines in Europe in competition with NAS since those firms are benefiting from the development it has done.

But NAS stressed that some "accommodation" over the problem of BASF and Olivetti would be made.

Versions of the Hitachi M-200H are now being sold in Europe as the 7/80 by BASF and the 5560 by Olivetti.

The M-200H is rated at 8 mips in single processor form. The NAS version of the M-200H is expected to have different features from the 7/80 and 5560.

New publication

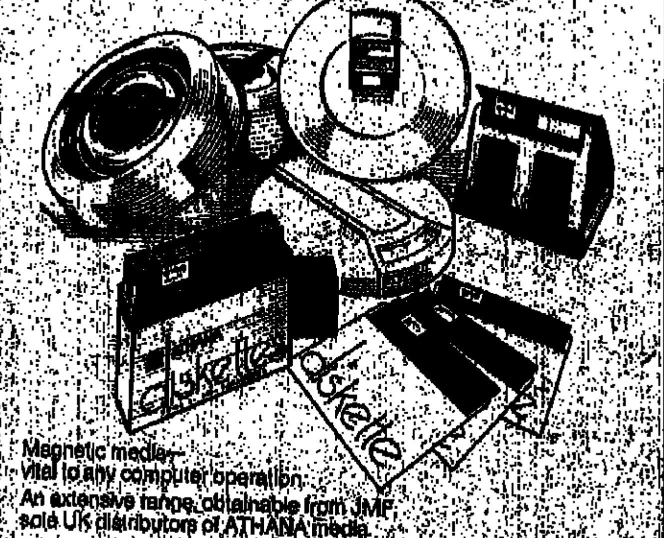
IN a market a tenth the size of the UK's and already catered for by three weekly papers, Computerweek, Dataweek and Computronics, a new South African computer publication has made its appearance. It is published by Thomson.

I/O firms join forces

THREE semiconductor companies within the GEC group are joining with the latest acquisition, Circuit Technology of the US to form Marconi Electronic Devices (MEDL).

MEDL will produce a wide range of semiconductors. AEI Semiconductors of Lincoln con[illegible] microelectronics division of MSDS in Portsmouth specialises in hybrid thick film circuit design and fabrication; and Circuit Technology develops integrated circuits using ISO-CMOS techniques.

A new production plant and design centre to be built near the [illegible] MEDL [illegible]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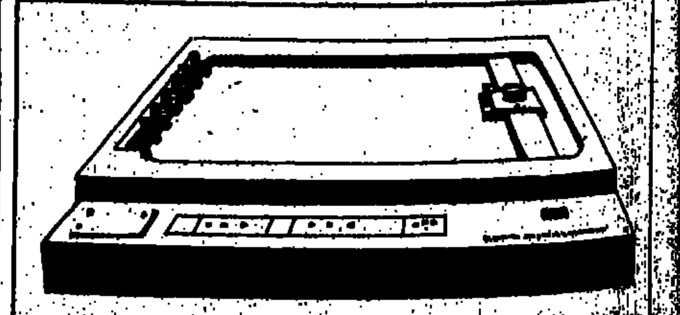
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East Germany catches up with a bit-slice micro

DETAILS of a new bit-slice microprocessor from East Germany strongly indicate that the Comecon countries' microelectronic technology is beginning to catch up with that of the West. A review of the two newest minicomputers from East Germany's Robotron confirms the forecast (CW, June 12) that the U830 chip is an eight bit wide bit-slice micro.

The East German Journal of Information Processing reveals that the chip, manufactured in N-MOS rather than bipolar logic, is part of a family. Other members include an arithmetic co-processor the U832, and a U834 bus controller.

Because of the technology of the U830, the fact that there is no similar chip from a Western manufacturer, and because of the speeds given for minicomputers built using the chip, there is reason to believe that the U830 is based on Robotron's U880 chip, which is similar to the Intel 8080. If this is so, the arithmetic-logic unit of the U880 will have been retained, and additional input-output circuitry designed to replace the on-chip instruction logic of the U880.

Unusual

An alternative theory is that it is based on an old Signetics design.

Two minicomputers have been built using the chip. The K1620 is a small 16-bit minicomputer with up to 32K-words of main memory, 4K of which are reserved for things like input-output buffering.

Time for a jump or a branch is 3.8 microseconds, making the mini about 25% slower than the Data General MicroNova or the Texas Instruments TMS 9900.

The larger K1630 minicomputer uses an unusual technique to improve performance. Pioneered in the revolutionary design of the Univac 1100/60 bit-slice mainframe, the technique is to use separate processors for computation and for address.

● Turn to back page

Briefing

'2966' due in October

THE ICL S3, unofficially dubbed the 2966, is pencilled in for launch in October.

The machine will be ICL's biggest microcoded processor and is expected to offer twice the power of the 2960, up to eight megabytes of main memory for George 3 DME, and could include ICL's time-slice architecture which will allow DME and the VME/B operating system to run simultaneously.

Mini for Monotype

THE new IS 2000 minicomputer, designed and manufactured in Britain, has been adopted by Monotype as the front-end processor for its film-setter computer-controlled typesetting system. Built by Interset of Bath, the IS 2000 is also the basis of a new business system programmed in Video.

Coal Board plans

THE Coal Board is laying plans for introducing distributed computers into its operations. A major user of both ICL and IBM mainframes, with a 2970, 2946, a 3033 and two 370/158s, the board is considering the ICL ME29 and IBM 8100.

● Russian software exchange plan — Page 3.

AM Jacquard

AM JACQUARD has asked us to point out that although it closed direct sales offices in Manchester and Southampton earlier this year, its direct sales forces are continuing to operate out of London and Birmingham as before. Last week's front page story incorrectly implied that all the company's direct sales activity had been terminated.

Three bidders

THREE companies, HB Computers of Kettering, Digital Design Techniques of Horsham-wood, and Hunzi Data Systems of Amersham have made bids to Robson Rhodes, the appointed liquidators of [illegible] woods, to buy its assets.

The last power cut...

LAST week's long service award went to the pair of English Electric KDF9s at the National Physical Laboratory in Teddington, as the power was turned off for the last time.

The first machine was installed in June 1964 and the second came from the National Computing Centre in 1966.

The pair were finally made redundant by the commissioning of an ICL 2972.

Our picture shows the engineers' panel on the newer machine being examined by Chris Davies of Computer Field Maintenance, which has maintained the machines since 1974.

The demise of these machines still leaves three KDF9s in the field.

DoI backs real time software training

THE Department of Industry is to support a new training course for engineers in an attempt to relieve the shortage of skilled managers of real time software products.

The course, Real Time Software Project Management, was developed by the National Computing Centre with Cranfield Institute of Technology and Marconi Avionics.

The course is to answer the need identified by Professor J. Merriman, chairman of NCC, for 400 people over the next four years to undertake systems engineering.

The objectives of the course are to give engineers an understanding of the life cycle of software, to help them identify major concerns in the progress of a project and to cope with the necessary documentation and forward planning.

Gene Amdahl lifts veil on Oslo

AMDAHL Corp's answer to IBM's forthcoming H-series is called Oslo, and according to Dr Gene Amdahl will feature a unique fast way of processing micro-instructions which overcomes the problem that microcode instructions are slower than those which are hardwired.

"When I was working on Oslo, I invented a different form of microcode control. It allows you to make a branch without making an additional memory access," says Amdahl.

Up to now, Amdahl has rejected the idea of multiprocessing, believing that it is always possible to build a single processor which will offer the power of the biggest multiprocessor complex IBM can manage.

However the Oslo machines will feature a complex form of "interweaved" multiprocessing.

"The Oslo computers will be able to do multiprocessing at great economy," he says, suggesting that a full understanding of the usage of the system can make a multiprocessor complex running under an operating system like IBM's MVS much more efficient than has hitherto been possible.

Dr Gene Amdahl has now cut all ties with the company he founded.

System 38 'thrills' UK user

THE first IBM System 38 user in the UK, the Hospital Saving Association of Lancaster Gate, London, is thrilled at the increased programmer productivity offered by the new machine when compared with the System 3 it is replacing.

The organisation says that RPG III productivity is excellent and it expects to write programs three to four times more quickly. With one day for coding and one day for testing, a business suite of 16 programs has been reduced to a single online program of 356 lines — and 168 of those are comment.

Hospital Saving Association is a club for National Health Service users, paying out cash for things like glasses and dental treatment.

Subscribers did not like the need to quote their policy numbers to get information on the old system: the System 38 relational database allows a variety of alternative keys to be used.

NCR adds ADDS

NCR has weighed in with a counter-bid for terminals and small systems manufacturer Applied Digital Data Systems — and looks home and dry already, since ADDS directors are recommending the offer to their shareholders.

If the deal does go through it will be NCR's second substantial acquisition since it sold its Appleton Papers division to British American Tobacco in 1978. At the beginning of last year, NCR bought communications processor manufacturer Comten of Minneapolis (CW, February 1).

ADDS got itself into the dangerous situation of depending on NCR for over 40% of its business. When NCR terminated a key OEM VDU contract and started building the successor device in-house, ADDS' profits suffered, even though in the first half of 1980 32% of its business has still been done with NCR.

History suggests that in the US, once a company becomes the subject of a takeover bid its days of independence are numbered even if the predator is not victorious. ADDS' future was therefore on the line as soon

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JOB OPPORTUNITIES: PAGES 28—56

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COMPUTERVIEW

Closed for the summer

WE seem to be stuck in the middle of the silliest silly season in Computer Weekly's memory, with nothing bar the computer equivalents of small earthquakes in Chile to keep our writers awake, and cries of "hold the front page" becoming a fast receding memory. (No-one does actually utter the hallowed cry at Computer Weekly, but we like to pretend they do.)

We used to deride the French for closing their country for six weeks in the summer, but the bug seems to have hit us at home this year, with the world and his wife taking their holidays simultaneously and only the occasional resting actor or temp left behind to man — person — the office phone.

The problem is just as serious abroad, where Computerworld in the US was reduced to running the Mount St Helens volcano as a lead story. Even the "big" stories, such as the frenetic politicking over the PAYE project, have been inescapably silly — yet Electronic News ran it as a lead in the US.

For those who thrive on hard news and fear that the world will never return to normal, there is mercifully plenty to suggest that their fears are ungrounded.

Nixdorf is due to announce its entry into the IBM-compatible market any week now, a move which will either change the face of the mid-range computer industry in Europe or end in glorious failure. We believe the hardware will come from Elbit of Israel, but we could be wrong and no-one is talking. Watch this space.

Something, too is happening in the top-end plug-compatible market in France, raising the intriguing possibility that glassmaker and industrial giant St Gobain will enter the UK market with Hitachi machines in partnership with Olivetti. St Gobain is in process of taking a controlling interest in CII-Honeywell Bull across the channel, which because of that company's complex structure only requires it to control 25.5% of the shares.

Then in October, ICL, whose long-awaited Information Processing Architecture announcement proved so opaque that it sank without trace almost immediately, is due to launch its S3 machine, unofficially dubbed the 2966. Offering twice the power of the 2960, it will be ICL's biggest microcoded mainframe.

Large users are faced with the need to change the microcode every time they want to switch between George 3 and VME/B. Although hardware costs are tumbling, the stop-gap solution of adding a second order code processor to run the old operating system under DME is not satisfactory, because peripherals have to be switched between the two machines. Discs are still expensive, and to duplicate all the files which prog[…] under both operating systems need to access is [not a] satisfactory solution. What they want is to be able [to run] DME and VME on the same machine, so that all files [can] be shared — and that will become possible with [time] slicing.

The idea is that both the 1900 (or System 4) and [the] 2900 instruction sets should be resident simultaneously, and that the order code processor should [switch] between the two. It sounds an ingenious solution [to a] problem facing several other manufacturers with [in]compatible lines, and makes the idea of putting [IBM,] Burroughs or Univac instruction sets into the 29[00 in] the medium term look even more irresistible.

All has been quiet on the IBM H front in recent [weeks,] but the launch of the large machines is likely to [slip] further into the future if, as now seems likely, [IBM] comes out with yet another 3033 variant, smaller [and] cheaper than the stripped-down 3033-N. Also on the horizon, although with no firm launch date, is a System 36 to give System 34 users a clear idea of where [IBM is] taking them.

Companies like Burroughs, General Automation, [...] and a host of others are preparing substantial announcements for the round of major autumn shows [which] starts with Sicob and ends with Compec.

And there is always the Computastars finals at the New Alexander Stadium in Birmingham on September 13 to look forward to.

LETTERS to the EDITOR

APL used in business

YOUR notice on the language Speakeasy (Software File, August 21) was wrong on one main point, misleading elsewhere.

APL is not used mainly by mathematicians and scientists: in my experience virtually all APL systems are business systems. This is confirmed in a recent book, APL in Practice, where it is stated that 80%-90% of STSC's (Scientific Time Sharing Corp) usage is in business applications.

The belief that writing GAUSSINVERSE (or whatever it is) instead of ⌹ somehow makes a program easier to read, is a bit naive. In APL, you can do either: if you want to mistype (!) GAUSSINVERSE, etc, then you can just wrap a defined function around ⌹. Nobody in APL actually does this, surely proving the point.

As far as special mathematical functions are concerned, these are child's play in APL. A mathematician using APL mathematically picks the language up in no time and will prefer it to any artificial "mathematical" language. For business applications, of course, he has no great advantage over anybody else. However, your article prompted me to reflect that APL could be usefully extended (though I warn you that every APL practitioner has his own favourite APL extension!)

This would be the facility to embed user-defined functions in the interpreter, written in machine code and callable by means of new overstrikes. Since there are

$$2+2153 \quad 1380$$

combinations, and less than 30 are used so far (ignoring underscores) there should be enough to keep most people happy, even given that a few of the overstrikes look horrible. This would also satisfy the desire that some users have had for "compiled" APL since time immemorial (or at least since ca 1973).

ALAN PEARMAN
Alan Pearman Limited,
Chester.

PAYE system

IN Computerview of July 17, a statement is made that the New Zealand government is looking for a PAYE system similar to that planned for the United Kingdom Inland Revenue and that "ICL might win that one even without getting the United Kingdom system".

I would like to point out that the New Zealand Inland Revenue Department has had a computerised PAYE system running for many years operated by this Division to the satisfaction of that Department.

Equipment installed is a Burroughs twin B4700 central processing unit servicing an online network of 41 Hewlett Packard Model 21MX minicomputers within excess of 356 terminal devices situated in Inland Revenue Department offices. Enhancement of this network by the addition of a further 70 terminals for ledger enquiry is currently under way.

R. C. WHEELER
General Manager
Office of the State Services Commission
Computer Services Division
Wellington
New Zealand

What it's like in Holland

AS an Englishman living and working in Holland for some considerable time, I awaited with much interest your article, Living and working in Holland (CW, July 24). How disappointed I now feel having read it.

I would like to quote examples from the article, with my comments:

● ". . . part of the EEC, so there is no difficulty with work or resident permits". Unless one is working for a government department there is no need for a work permit, but I would cite an example of obtaining one. After seven months, a friend of mine is still awaiting his permit to work in the department that actually issues them! Resident permits are granted by the local police who have every right to refuse or to make conditions. I quote, "The accommodation you have is not, in our opinion, suitable for young children and you must move to more suitable accommodation. If you do not, your wife and children will have their permits revoked and will have to leave the country."

● "The language is Dutch but English is widely used". This may be correct in some companies but is not always so. In social life it is not always true, in shops it is not generally true, in the street it is not generally true; try asking for directions or assistance, eg "Does this train go to . . . ?" "Yes", but what is not explained is that you have to change and wait until the next day. Do not confuse "English is widely used" with "English may be understood" — there is a subtle difference.

● "Education is available in private . . . English-speaking schools." This needs further explanation for a person with a young family contemplating living and working in Holland. The article should have dealt explicitly with this as it is very important, rather than wasting some of the 1,200 words with references to "sunny Spain". Schools, as referred to above, can be expensive and do exist in some large towns, but they may be a considerable distance from your place of residence.

● "Housing in Holland . . . . rents are controlled." This whole piece is a distortion of fact and is a typical piece of gloss put about by some of the recruitment organisations. Housing is expensive and can be difficult to find. There is a housing shortage in Holland for Dutch people, there is also a shortage of low-cost housing. Rents are controlled in the public sector but housing of this nature is virtually impossible to obtain unless you are Dutch and have been on the waiting list for a considerable time.

In conclusion, let us have more articles about living and working abroad as it is an invigorating experience, but please do not allow glossy semi-truths.

I like it here; let others come with the knowledge of what it is all about. They can buy their own tourist guide!

R. L. LAKE
Beekbergen,
Holland.

COMPUTER Weekly is always pleased to hear from its readers. Drop a line to: The Editor, Computer Weekly, IPC Dorset House, Stamford Street, London, SE1 9LU.

Videomaster not for sale

I AM writing about your comment (CW, Micro News, August 7) that Videomaster is up for sale. The fact is that John Waddington Ltd are making no attempt at all to sell Videomaster. Videomaster's operation has been reduced in scale but it is continuing and is in a better position than ever before to give service to its customers.

VICTOR H. WATSON
Chairman
John Waddington Ltd

1984 and all that . . .

THIS week's example of the strange things people say in the media about computers was sent in by A. E. Lucas of Cobo, Guernsey who wins £5.

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UK-USSR software swap in the offing

Soviet delegation visits ICL

THE Soviet delegation made a detour to ICL's Scottish Development Centre at Dalkeith and stopped long enough to have a photograph taken with that most distinguished of elder statesmen, Arthur Wellesley, Duke of Wellington.

Under the Duke's marble eye are (from left), L. Eskov, head of the department of foreign liaison; A. Migachev, deputy director in charge of foreign relations at the Department of Industry; Sandy Blackie, manager of the ICL centre; P. N. Ivanov, Deputy Minister of the Ukrainian Coal Industry; and L. Klimov, Director of Computing at the Ministry of Coal.

The ICL centre does system software development for ICL's microcoding projects, test microcode for simulation in manufacturing, communications software, and development of language compilers and interpreters such as Coral and Basic.

A SOFTWARE exchange between the Soviet Ministry of Coal and the UK National Coal Board could follow a series of detailed examinations of the computer systems used in each country.

The agreement to undertake feasibility studies followed the latest in a series of exchange visits, and areas chosen for study were purchasing and stores, financial systems, safety in mines and planned maintenance systems.

"No money would change hands," stressed a Compower spokesman. "It would be on the basis of their having a system that was useful to use, and exchanging it for one of our systems. If the cost of conversion worked out less than the cost of development from scratch, we could save several man-years of effort. We gave them an outline of a planned maintenance project that we have just started work on, and they say they have one already running."

The delegation visited Whitwick Colliery in Leicestershire to see an experimental project to capture manpower deployment data at colliery level. The data is being transmitted to Compower's IBM 3033 at Cannock, which is running the IMS database system.

No hitch

In Edinburgh the delegation saw the new ICL 2946, which has replaced an all-batch 1903A. First reports say that the transfer of work — Scottish area payroll, financial and marketing information — went without a hitch and the machine is giving substantially more throughput than the 1900.

At Doncaster, where there is an ICL 2970 and an IBM 370/158, the visitors saw systems for purchasing and stores and deployment of mineworkers.

At Cannock, where there is a 370/158 as well as the 3033, they saw financial and mine planning systems.

Japan trails US in IC plant

THE US is still far superior to Japan in the field of VLSI device production machinery such as electron beam lithographic equipment, according the the Japan Economic Journal. However, the country is catching up with the US in the field of semiconductor manufacturing equipment.

In Japan, emphasis is being placed on the importing and marketing of this equipment, but at the same time some companies are sending engineers to the US to follow the development of new equipment. At the moment, Japan is importing 60% to 70% of its semiconductor manufacturing equipment.

One of the companies importing US equipment to Japan, Tokyo Electron, is headed by Tokuo Kubo, who considers that the market for semiconductor manufacturing equipment has reached the $500 million level and is expected to grow at an annual rate of 30%.

Honeywell offers schools free computer course

IN a splendid piece of community service, Honeywell is offering secondary schools in the neighbourhood of its Hammersmith Education Centre a one-year computer appreciation course.

The course will run for one academic year, 40 weeks, consisting of weekly sessions of one hour starting at 5.15 pm.

Comprehensive

Called CLASS, Computer and Logic Appreciation for Secondary Schools, the course is aimed at pupils in their last year at school, and although pitched at an appropriate level for novices, is extremely comprehensive. It covers every aspect of computers likely to be of importance to people who will work with them, embracing everything from input-output media and peripherals through data communications and security, file organisation and databases to nitty-gritty programming.

By weeks 21 and 22 the students will be on to programming processes and structured programming, and by the last quarter of the course they will be writing their own programs.

Honeywell deserves to get some spin-off benefit from the course, and as most people retain a lifelong affection for the computer they first worked on, there should be a few fans for the Honeywell Level 6 mini by the end of the course. Several Level 6 configurations will be available to the students for program development.

Students will attend in groups of 20, the number of groups ultimately being limited by Honeywell's resources. The classes will be conducted by a team of Honeywell lecturers who are volunteering their services.

Expanding Digico may buy three UK firms

RAPIDLY expanding minicomputer manufacturer Digico is talking to three UK firms in the computer business that it would like to acquire. According to Digico's marketing director, Ken Atkinson, they have an aggregate turnover of £9 million and Digico could end up buying all three.

Atkinson pointed out that if Digico decided to go ahead with the acquisitions it would need to raise a lot more from its projected Stock Exchange share placement next year than the £1 million being considered at the moment. Digico is seeking an unlisted quotation under Stock Exchange Rule 163 (2).

A shorter-term development revealed by Atkinson was the planned announcement at November's Compec exhibition of the M78, a top end addition to the Digico minicomputer line.

Atkinson said that the M78 would employ a "distributed architecture" involving multiple processors.

Turning to the company's financial performance, Atkinson said that he expected Digico to report a net profit of £400,000 on a turnover of £4.6 million for its current financial year which ends on September 30.

New divisions

He expected existing operations to expand by about 30% in the coming financial year and three new Digico divisions each to add another £1 million, bringing Digico's turnover for the year to £9 million — even without any acquisitions.

Two new divisions are selling OEM peripherals and consumables and the third is a software and training operation, Atkinson admitted that they had contributed little to Digico's turnover this year.

Atkinson said that Digico was already partly publicly owned, 15% of the company having been acquired last year by two investment trusts.

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Downtime

by Chad

Heading for trouble

SOME of our readers have found it odd that Computer Weekly has a section called Page Six. It is of course an old computer tradition to refer to things by their addresses rather than their contents, and this is dying hard, despite the efforts of Gordon Scarrot and his CAFS team at ICL.

It does raise practical difficulties, as when we were having problems at our printers and had to put Page Six on page four.

You may be interested to know that we are not the only publication with a Page Six. The other I know of is the New York Post, Rupert Murdoch's transatlantic version of the Sun, and Page Six there is a gossip column. (Gossip columns? What are they?)

The Post is engaged in a permanent circulation war with the New York Daily News, and shows remarkable ingenuity in its efforts to come up with attention-grabbing headlines such as "DEAD WOMAN WINS ELECTION". It even succeeded once in combining sex and violence in one heading: "Nude bathers look on in horror as 2 die in air crash".

We're still waiting on CW for a chance to print such headlines as "Model girl strangled with paper tape". Not that we want any of you to go out and generate the news for us.

But if you could engineer "You know who goes bust" that would do fine.

"That confirms it then, gentlemen, J.R. shot himself."

Imprecise

REFRESHING candour from Unilever Computing Services, which has just rushed out a manual for the new high-level language it is marketing, Speakeasy. The manual is only two-thirds finished, however, so it has been dubbed Release 0.67. I am disappointed by UCSL's lack of precision, though; in our ultra-scientific business it should of course be Release 0.666666....

One man's junk is...

LOGICA has finished its report on how to automate the Australian Parliament (the paper handling, that is — they're not actually contemplating replacing the legislators with chips). In the midst of the interviews with prospective users one outspoken Senator was asked whether he would want a provision in his electronic mail system to protect him from junk mail.

"Ah well," said the Senator, "one man's junk is another man's antique."

MICHIE'S PRIVATEVIEW

Sing a song for Lefty Long

Professor Donald Michie is head of the Machine Intelligence Research Unit at Edinburgh University.

EVERY year, the Royal Society of Canada sponsors a meeting on Prospects for Man, at York University, Toronto. This year's theme, computers and society, was introduced to a gathering of 500 by the University president, Ian Macdonald, a former Balliol economist.

In rising to his challenge most of the speakers stuck to what they knew, and I dare say we formed a prosy enough procession. But for those who knew it all already, Dr Adam Osborne, a young publishing executive, dispensed raw lemon at half-time into open mouths.

We are not regulators, planners, or even prophets of this technology, he warned, but its helpless prisoners. The dams have burst. We are whirled along on the tide's ruthless currents. The only constants now are the ferocities of the market place, and the greeds and imbecilities of human nature. If we do not care to believe, then we have not long to wait.

By the end of the decade, Dr Osborne claimed with menace, half the population will be out of work and rioting in the streets.

As I left the hall by taxi I noted the sweep of Toronto's vast streets, rioting-grounds of the future. Would my driver, I wondered, be among them?

"What do you think of computer-controlled automation?" I blurted out.

"Surprising," he said (and I already knew that this brisk-looking middle-aged man was from Ireland), "about robots. They paint-spray the cars inside, as well as out. It's something just beginning. But it will be everywhere, they say."

"What about unemployment?"

"Earlier retirement. Who's going to mind that? We should put the extra wealth into the retired people. The senior citizens' lives — just imagine ..."

"You mean adult education?" I prompted.

"*If* you like going to classes. Some do. But *everyone* likes to be entertained. I had my own group. I sing, you know. Country style mostly, but anything ethnic, anything at all. We'd do two spots on the Monday and Tuesday at the tavern, one extra each night just for senior citizens. They brought bus-loads from the old-folks' homes. 'Sing a Song for Lefty Long', that was the promotion, because when I'd got them going I'd put the spotlight on a table, and that table would have to sing a song. Then they'd get a free drink. Now everyone loves to be bought a free drink, because they reckon it at retail prices, you know. But to the management it costs next to nothing!"

> ***By the end of the decade, Dr Osborne claimed with menace, half the population will be out of work and rioting in the streets.***

"I hadn't thought of that."

"You won't believe it, but I was approached to do a Lefty Long show on radio. I got the name Lefty when I was a footballer."

"So you took the radio offer?"

"No. You see, I already owned my own taxi, yet hardly used it. With pub singalongs and such, I make enough. My six kids are all grown up. The radio show would have been every Sunday. But Sundays I like to be up at the lake. I have a school bus there, you know. No engine of course; I've converted it into a fishing lodge."

Mr Long paused. "You see", he added, "at the age I am, I'm not here for ever. I like this world. I want the best from it. So if someone wants to take from me even one minute that otherwise I can use for myself, I am going to give him a hard time."

In the panel discussion at the meeting's closing session, Gordon Thompson of Bell Northern Research provoked spontaneous applause. "It's not a question of work *versus* leisure on the old definitions. On my definition, leisure is what you would still do even if you weren't paid to do it. So if the micro-chip revolution abolishes work, *all* work, so that we only have leisure, then what I say is . . . *great!* I say: *at last we've done it!*"

Utopia sounds more plausible, it must be conceded, to an academic audience, an audience neither under-nourished nor illiterate; and good chances of averting Dr Osborne's scenario will certainly require unprecedented resolve for bettering. To that extent he has a point.

But it is a point which has been made before. Not many more than a century ago it was considered undesirable to work factory labourers, whether adults or children, for less than 14 hours a day. If left with time on their hands, it was felt, they would all be rioting in the streets.

> ***If someone wants to take from me even one minute that otherwise I can use for myself, I am going to give him a hard time.***

As every schoolboy knows in the event they rioted anyway and got their hours reduced.

Donald Michie

Reference

Osborne, A. (1979). Running Wild. Berkeley, Ca; Osborne/McGraw Hill Inc.

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Harris plans rival to IBM 8775 VDU

NOW that IBM is offering the 8775 display terminal as an alternative to the 3270 (CW, August 28) one of the leading suppliers of 3270 compatible kit, Harris, has revealed that it plans to introduce a competitor for the 8775. The sectored screen of the 8775 could make it more attractive than conventional 3270 type units to many IBM users.

Harris UK sales manager Andy Surtees told Computer Weekly that his company intended to carry out a study of the potential market for the 8775 and would probably bring out a similar product.

On the technical side Surtees pointed out that no specifications were available yet from IBM on the 8775 in its new role as a 3270 alternative. But he recognised that a big difference between the new version and the existing 8775 model would be interactive communications facilities.

Sophisticated

In its existing role as a VDU on the 8100 distributed processing system, the 8775 operates purely in local mode, while the new version offers sophisticated communications facilities like SDLC support.

The 8775's screen sectoring feature enables the screen to be divided into eight separately addressable sectors and the cursor to be allocated to any one of them. The 8775 is driven by a Motorola 6800 microprocessor.

Surtees believe that the multi microprocessor design of existing Harris 9200 series terminals would enable the screen sectoring feature to be added fairly easily.

ITT Business Systems, another big supplier of 3270 compatible terminals, said that it had no plans at present to introduce an alternative to the 8775. ITT also differs from Harris in not having announced its intention to bring out an alternative to the IBM 3279 colour display.

Development of Harris terminal products for IBM users is mainly carried out in the US by Harris Data Communications, the kit being sold in Europe by the international division of Harris Information Systems which markets all Harris computer products, including its minicomputer line.

ITT's 3280 equipment is built at Phoenix, Arizona, by the operation that used to be owned by Courier Inc.

The Times in techno debate

CONFRONTATION between the two sides in the continuing dispute over new technology at The Times should provide an interesting climax to the two-day seminar on computer-aided printing and publishing to be held on September 9 and 10 in London.

Dougal Nisbet-Smith, Times managing director, and Joe Wade, general secretary of typesetters' union, the NGA, will be taking part in a closing discussion with Clive Bradley of the Publishers Association.

The conference is being organised by Cranfield Institute of Technology to coincide with IPEX, the international printing exhibition.

Technical support

TECHNICAL support for European clients of the US systems house Marine Management Systems is to be provided by a new subsidiary of the same name operating from the World Trade Centre in London. The latter will also market a maritime information service.

Civil liberties body calls for law to control personal data files

A LAW controlling the use of personal data files, without the establishment of a Data Protection Authority, should be enacted as soon as possible, in the light of the present government's reluctance to set up any new quangos.

That is the view of the National Council for Civil Liberties, which has drawn up a proposal including the provision that both computerised and manual files should be covered.

Under the NCCL's proposed Protection of Personal Information Act, all organisations with files of personal information would be legally obliged to publicise their existence and provide ways for data subjects to know whether they are included, inspect their entries, insert corrections, and have corrections circulated to anyone who may have received wrong information.

Only criminal investigation and medical records would be exempted under the scheme. Disputes would be settled by an arbitrator, who according to the subject area would be the national, local government or health service Ombudsman, the Director-General of Fair Trading, or an industrial tribunal.

First fruits of System X

THE first fruits of the accelerated System X development programme will be displayed next week, when the Junction Tandem exchange at Baynard House in London is formally opened by Peter Benton, managing director of British Telecom.

The exchange has been operating successfully since early July, switching calls between local exchanges in various parts of London. But subscribers will have to wait about six months for the first local System X exchanges.

Police choose SPL for 999 calls

AFTER spending 18 months in the evaluation of various tenders for the project, the Northumbria Police Authority has chosen SPL International to supply its despatching and message switching system to be used for monitoring staff activity.

The project is worth over £2 million and over half that amount is in areas outside the hardware cost. It is expected to take 25 man-years of work to complete, and will eventually help to keep track of 4,000 officers and civilian staff.

Tandem hardware is to be used, with the message switching package ADS. VDUs and printers will be distributed throughout three area operations rooms and 30 other locations to provide online interrogation, update and local print facilities.

The application software is to be in Cobol and TAL, Tandem's own block-structured high level language, but the police authority is not ready to release details of design.

Discussions...

"We've just started discussions on the design with the manufacturer," explained Chief Inspector Terry Yeomans, "and already it is clear that there will have to be some compromises. Some of the ideas we had aren't absolutely sound."

The plan is to receive incoming calls for police help at the relevant operations room serving that area. The details of the message will then be recorded using the VDU and adding any further comments.

The information is then automatically transferred to another operator whose job is to reference the resources available in the area and despatch the nearest free officer to attend the incident.

First system

The system is to run under the Guardian operating system using the standard Tandem software, Encompass.

It is the first UK police system to be based on the Tandem hardware and will use the Tandem Non-stop configuration with four processors and eight 240-megabyte disc drives. This will be linked via a Racal-Milgo communication network to 111 Lynwood Beta VDUs and 47 printers supplied by Texas Instruments.

Developments will take place on SPL's own in-house T16, and the firm's ADS-365 message switching system, adapted from Plessey's DMS-660 package, will be used.

SPL recently signed a two-year OEM contract with Tandem worth £1 million (CW, December 13, 1979) and has already fulfilled it.

'Which electronic office'

SEVERAL companies over the last year have announced products described as integrated electronic office systems, and they are now to have a chance to argue in front of an audience their respective claims to have taken a real step towards the office of the future.

On October 2 and 3, Business Information Techniques is presenting a conference in London called Which Electronic Office? at which senior staff from Prime, Ventek, Philips, IBM and other firms will describe their different approaches to office automation.

Chairing the conference and presenting an introductory survey will be Rory Johnston of Computer Weekly. Henric Kjellin of Nexos will outline his firm's yet-to-be-realised scheme for a unified office system using the Delta 2 multiprocessor, and other firms contributing will be Rank Xerox, Wang and Redifon.

Further conferences on the same subject to be presented by Business Information Techniques include Advanced Word Processing on November 3 and 4, at which Johnston will summarise the integrated approaches to office automation, and Gluing the Automated Office Together on November 13 and 14, at which the speakers will include Pat Coen of Logica and Leela Damodaran of the human factors group at Loughborough University.

Mini enhancements

ENHANCEMENTS for the Honeywell Level 6 mini include a Basic interpreter or interpreter/compiler and a file transfer facility under the GCOS 6 and MOD 200 operating system. New Cobol, Fortran and Basic compilers and a data entry subsystem are offered under MOD 400.

Online training

AIR conditioning specialist Denco Miller has opened a new office at Monaco House, Bristol Street, Birmingham, B5 7AS. Tel. 021-622 6261.

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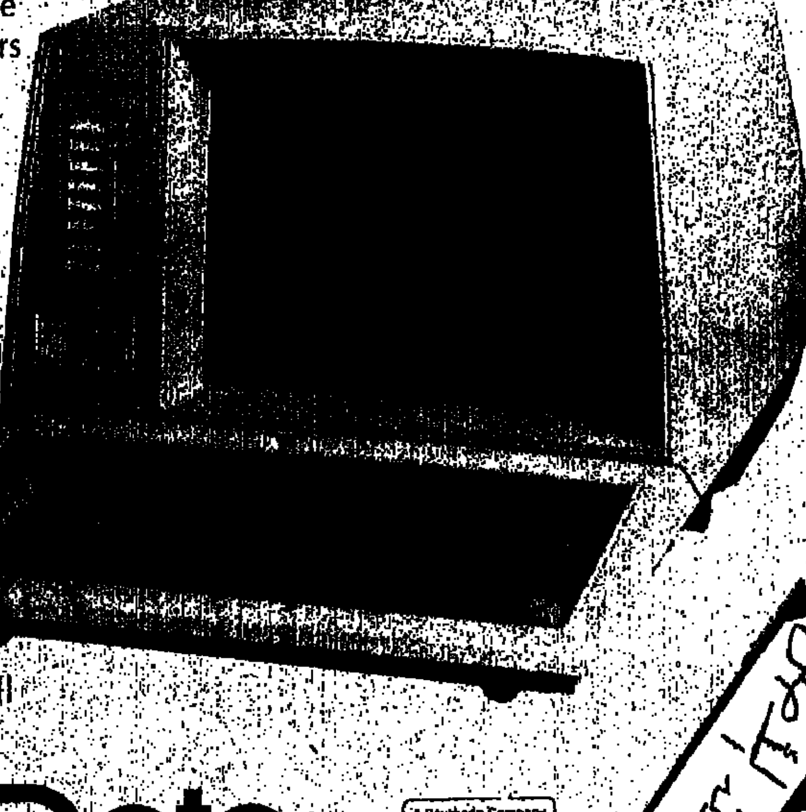

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PAGE SIX for programmers and analysts

Experience is Catch-22 for job-seeking TOPS graduates

"I FEEL I must write to you in an attempt to prevent other people becoming victims of the same circumstances in which I now find myself.

On January 7 this year I commenced a CDI (Control Data Institute) computer programming course, after giving up a successful teaching career because of a deep desire to work in the computer industry.

At the initial aptitude test and at a subsequent interview I was assured, provided I made a reasonable effort and satisfactorily completed the course, I would have a 98% chance of obtaining employment.

I completed the CDI TOPS course without any problems and to the complete satisfaction of my course tutors. This was nearly three months ago and now, despite 160 letters of application and enquiry to nearly every computer user within a 40-mile radius of my Redditch home, and the little assistance given by CDI, I find myself unemployed for the first time in my working life.

My excellent educational qualifications, including language degree, faultless work record with my previous employers and high attainment on my CDI course, seem to be of little matter to prospective employers which seem to be far and few between. In fact 50% of my fellow CDI graduates are also still unemployed despite many reassurances to the contrary by CDI prior to and during the course.

In conclusion, I feel disillusioned, betrayed and frustrated by the wastage of my efforts, dedication and aptitude, not to mention the waste of government finance in the payment of my costly training. I hope this cautionary account will be taken into consideration both by prospective TOPS students and those responsible for the financing and implementation of these courses.

Redditch — Mrs A. M. SMITH"

"IT was with great interest and amusement that I read Alistair's Adventures in Computer Land (Page Six, August 14).

I am 27 and after four years of teaching I decided the time was right to seek new pastures within the wide and wonderful world of DP.

My decision was not arrived at overnight and after long conversations with both friends in the industry and my local PER I had a go at the IBM aptitude test for the TOPS course in systems analysis run by KBS in Leeds.

I was successful and accepted for a course which started in October 1979, and after a gruelling but enjoyable 22 weeks finished in March of this year. However, from there on the going got considerably more sticky.

After a barrage of letters and telephone calls in search of employment I got an interview with a major American manufacturer. They interviewed me three times (two formal, one informal over a pint in the pub). They then took up references and sent me for a medical. Although still looking around and not counting my chickens I reckoned I had this one sewn up.

About five weeks later I received a phone call saying my application could be taken no further as my references were not satisfactory; even though I had personally contacted my given references in advance and been assured of good testimonials.

Well, to date I have applied for 96 jobs and received three interviews. I was rejected at one and am awaiting the outcome of the other two. I have tried every type of approach from humility to out-and-out cheek.

I realise that I am not the only person in this predicament, but perhaps one of your readers can suggest a way of overcoming the Catch-22 situation of experience necessary to gain experience.

Bradford — ALISTAIR J. S. MACDONALD"

Why are they not wanted?

THE two letters featured on this page today and the one we received last week are typical of the plight currently experienced by a large number of TOPS students.

The Manpower Services Commission itself has said that figures this year are well below the 98% quoted for last year, and placement of TOPS students is becoming increasingly difficult.

Although we mentioned two weeks ago on this page that many programming schools are not what they seem, we must point out to any prospective TOPS programmers that a company does not necessarily have to be a good one to qualify for TOPS support.

Companies do not agree to train programmers via the TOPS scheme out of the goodness of their heart. They receive a grant from the government if they run TOPS courses, and obviously if a firm can say that it has successfuly trained 100 or so programmers this year it sounds very good and is likely to impress other employers who will pay large sums to have their staff trained.

As long as a firm can provide the basic facilities and staff necessary to run a training scheme, it can qualify to operate TOPS courses. This isn't to say that the MSC is happy to send you along to any old place. It just means that it really can't tell which is a good place for TOPS and which isn't.

No matter how big the company, how well-known the name, no one firm can assure you that you will get a job after taking its course. And if it tries to tell you that you will, take it with a pinch of salt.

Interviews

Getting a job is a difficult business these days for anyone. There is no short cut. After finishing a TOPS course, you will have some basic skills and some acquaintance with computer systems. You will not have any qualification as a programmer, only the ability to become a trainee programmer — quite a different kettle of fish.

To be fair, you will not have been selected purely as a result of your performance in aptitude tests. Interviews also count, because no matter how good you are at mental arithmetic or anything else, if you don't come across well in an interview before you take the course, the chances are that you won't when you've finished it either. Companies operating under the TOPS scheme usually take this into account and avoid taking on "unemployables" as much as if they were interviewing them for a job within their own company.

Most TOPS programming courses are the same. Some companies offer a choice of programming language, or teach by different methods, for example by self-help techniques rather than classroom methods.

Basically, however, the content is the same. Students usually learn Cobol and write a suite of five programs ranging from a print program to a simple payroll or something like that.

You will find, however, that the methods of teaching programming these days have not varied very much for the past five years.

Still unsuitable

This means that when you have completed the course and get a job, an employer may well find you unsuitable to do the kind of work he requires.

The employer might employ programming methods with which you are as unfamiliar as you were before you even thought of taking a TOPS course.

This seems to be one of the main reasons for the reluctance of employers to take on TOPS graduates. But it is by no means the only one. The general recession and the fact that people in general need a speedy solution to their staff shortage also contribute.

The training bodies are also a little to blame. If a company is going to train people as programmers, whether financed by the MSC or by private employers, why not go the whole way and give them the real treatment? That means teaching them the latest techniques and actually finding out what sort of basic training employers need and want.

Stick it out

And that leaves you. Unfortunately, if you are already in the situation described by our correspondents there's nothing for it but to stick it out, keep applying and don't lose heart.

After hearing the sorry tale of so many TOPS programmers, Page Six would welcome any comment from employers who can tell them, and us, why they are not wanted.

FOCUS

Lifting the face of the PO

IF the Post Office thought it could avoid the slings and arrows of outrageous criticism merely by changing names, then it has got the wrong line. British Telecom is now on the receiving end of computer industry stick.

A further nudge was given last month by Dr Roger Camrass of Butler Cox. Speaking to the Service 800 international telephone organisation, he suggested that the recent liberalisation of the PTTs could be taken as an admission of defeat. International PTTs are all, apparently, in a tumbledown state and much in need of a facelift.

This facelift will need to be more than the change of corporate colour from yellow to blue. While lifting the face of the PO is a fascinating thought, especially where Buzby is concerned, a wholesale improvement in UK PTT service could be tough luck on the DP teams.

For many years, the PO has acted as a convenient safety net for the computer operation. That wrongly coded data could be blamed on poor transmission lines. The inefficient terminal is the fault of the PO-supplied modem. Those long VDU response times can be assigned to an asynchronous communication blip. Demand by users for additional computing facilities can be stemmed by suggesting that while the DP team could tackle the project, the Post Office could not supply its part of the assignment for some considerable time, if not longer. Meanwhile, the suggestion will be placed in the DPM's Pending tray until the PO supply and connection position becomes clearer.

For the DP team, however, too much knocking of the PO is not a recommended policy in the long term. Computers are increasingly interfacing with telecommunications — whether it is linking East and West India Dock Roads, or Baker Street with Hong Kong. Even the recent 50% leased line increases will not stem the demand.

In fact, keeping pace with telecommunications requires more than a set of international directories.

Rocking the PO telecommunication boat could well leave the DP installation high and dry. Companies, computers and telecommunications are closely linked in real time, both in-house and remote. That PO expansion has failed to keep pace with worldwide demand is probably the major factor behind the decision to free certain Post Office monopolies. When seemingly the whole business world suddenly demands to join the electronic office club or be connected up with viewdata, Prestel and Teletext, it is hardly surprising that telecom resources become strained.

It seems rather strange that the DP industry is not switching on some practical telecom courses, seminars and workshops.

Getting to grips with telecommunications is a vital necessity for the DP professional. Otherwise the UK computer world could be left getting the time pips or extended engaged tones.

CONFERENCES

Symposium on micro opportunities

A symposium on Microprocessor Applications and Opportunities in Building Services is to be held in London [illegible] September 29 [illegible] ised by the Institution of [illegible] and Electronics Technician [illegible] eers. The conference is [illegible] those in electrical contracting [illegible] building services. Topics will [illegible] environmental control and [illegible] security alarm systems. Further information from IEETE, 2 Savoy [illegible] London WC2R 7BS. Tel [illegible] 3357.

A conference on choosing [illegible] using a microprocessor development system is being held in London [illegible] October 1-2. It aims to provide information on selection and [illegible] microprocessor-based systems [illegible] includes an exhibition of [illegible] associated with the conference [illegible] organised jointly by Sira [illegible] and ERA Technology. Further information is obtainable from [illegible] South Hill, Chislehurst, Kent [illegible] 01-467 2636.

The International Conference [illegible] Data Processing Berlin [illegible] being held on October 7-8 in Berlin. Organised by the AMK Berlin [illegible] pany for Exhibitions, Fairs and Congresses, the conference will provide a forum for ideas, discussion of problems and proposal of solutions between users and developers. There will be an accompanying trade [illegible] displaying software. Further information from Dodo Carr, Westerham Marketing Services, Crown [illegible] Morden, Surrey.

Midcon '80 will be held in the US, from November 4-6. It is organised by Electronic Conventions [illegible] Further information can be obtained from Robert Myers, Communications Counsel, 999 North Sepulveda Boulevard, El Segundo, California 90245.

10 years ago

From Computer Weekly of September 3, 1970.

STUDY contracts were placed by the Post Office, foreshadowing the conversion of a large portion of the [illegible] trunk network to digital, rather than analogue, [illegible] all types of traffic ... The [illegible] Univac DCT 2000 [illegible] linked to Scicon's Univac [illegible] computer [illegible] Chemicals (UK) ... The [illegible] operational navigation [illegible] weapon-aiming system [illegible] British Jaguar [illegible] livered by Elliott Flight [illegible] tion to BAC's factory [illegible] ... Taiyo Bank in Japan [illegible] further Univac [illegible] puter to its already [illegible] data processing [illegible] It was predicted by [illegible] Electric Company [illegible] computer which [illegible] the palm of the hand [illegible] manufactured [illegible] cade, following [illegible] ment of the [illegible] memory device [illegible] main" element.

Puzzler

HERE'S an [illegible] probability [illegible] be tested [illegible] mathematical [illegible] How many [illegible] are needed, [illegible] duce each [illegible] least once? [illegible] solution.

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DATA DYNAMICS

SOFTWARE FILE by Claire Gooding

'Too sophisticated' DL/I is dropped in favour of Total

"USING DL/I we needed a systems programmer who knew exactly what it was all about. We do without one now." This comment highlights a difficulty faced by installations which, tied by investment in existing systems, try to fit their needs into the IBM software mould.

It was made by John Richardson, manager of a project at Luton engineering firm, Hayward Tyler, which found IBM's database management system DL/I too sophisticated and complex for its needs and dropped the product after months of planning, to replace it with Cincom's Total, which was up and running in matter of weeks.

Hayward Tyler had fallen so far behind the "state of the art" that IBM stopped supporting DBOMP, on which its main files depended. DBOMP has no direct heir in IBM's database management systems and Hayward Tyler settled for DL/I to run on its IBM 370/138.

Planning

The project team, whose first task for the database was a purchase order system, had difficulty matching the complex requirements of DL/I's structure.

"It needed long term detailed planning," said Richardson. "You had to be sure that the needs as currently stated would stay the same for the next 10 years or so — and that's impossible."

Although IBM gave all the help they could, morale on the team fell as the project dragged on, and people began to leave. The final blow to the attempt to implement the database came with a pilot run of DL/I. The mere loading of it slowed down the response time of the system from the customary two seconds to six or seven.

"All our schedules went out of the window," explained Richardson. "It chewed up half a megabyte instantly — it felt as though we'd got the anchor out all the time.

"All we really wanted was an online database," he continued, "and DL/I was obviously too complex for our needs. We were using perhaps only 10% of its ability."

Problems

The problems in implementing DL/I and the loss of DBOMP maintenance prompted the firm to look away from IBM products and consider others.

Total, a database system which has been around since the late Sixties and is implemented on a large range of large and small machines, met the needs of the purchasing system and looked as if it could cope with further developments.

Hayward Tyler needs to look to the future, and although Total costs £12,000 a year, it matched data requirements and will enable the firm to drop DBOMP within a few months, as well as adapting to the planned upgrade to IBM 4331 in the future.

It also took only six weeks to get up and running, with programming ahead of schedule.

Nixdorf's challenge to IBM's DOS/VS

HAVING taken on IBM at the lower end of the plug compatible market (CW, June 12) Nixdorf is entering the battle armed to the teeth with two new software products and three updates. With the purchase of the Computer Software Co of Virginia, Nixdorf has acquired enhanced versions of IBM's DOS operating system and a software products arm, now called NCSC.

It is now making a bid to attract customers to its NCSC database, its data dictionary and other alternatives to IBM products.

Nixdorf's flagship is EDOS/VS, the DOS/VS look-alike operating system for IBM 360, 370, 4300 and PCM mainframes. According to Nixdorf, EDOS/VS contains many features only recently announced for DOS/VSE and has others which are available only to OS/VS1 and MVS users.

Alternative

Nixdorf says there is no retraining involved in moving from a DOS to an EDOS environment and claims that EDOS can be an alternative to expensive software and hardware upgrades by getting the most out of the current system.

The latest version provides increased I/O processing speed with priority channel scheduling. Release 1.2 also includes enhanced 370/158 support, and 3330-11 disc support, improved machine check validation and ISAM support for 330-11 users.

Standard features of EDOS already include 12-partition support, real storage management and extended operator console support. The EDOS procedure library permits conditional execution of jobs and up to 15 levels of nesting.

Support

The system also supports OS-type partitioned data set [illegible] with a complete online [illegible] management system. [illegible] multiple updates [illegible] multiple partition or even [illegible] CPUs become possible, says Nixdorf.

The sixth Nixdorf user conference was the launching pad for the Extended Procedure Language for use with EDOS/VS. It is said to allow extensive control of operations scheduling and is billed as a "true language", featuring arithmetic expression as logical expressions and character string processing.

Also launched was a CICS variant of the data entry control system, DEX, running under CICS Standard or CICS/VS telecommunications system.

DEX-CICS is said to provide management control, comprehensive editing facilities and complete data integrity. Nixdorf also claims that an hour of training will suffice for non-technical staff in using the product as it uses a fill-in-the-blanks structure with commands in English.

Updated

Updated versions of three other products for the EDOS market were also released; the data dictionary, the database, and the extended console system ECON.

The NCSC database has been made faster and now makes the database more easily available to the user. Changes in the utility programs are said to improve management control, and the generalised multi-thread interface provides simple access through most teleprocessing monitors and batch inquiry systems.

Release 2.0 of ECON provides support for any combination of 1052, 3210, 3215 and 3270 type devices. It can also cope with magnetic ink character recognition, and provides a timeout feature and other operation controls.

Interactive packs for micro systems

A PAIR of interactive business packages for payroll and administration of sales, purchase, invoicing, reporting and other daily tasks for the small business is being launched by Horizon Software, which specialises in microcomputer applications.

It is designed for simplicity, giving the operator guidance and validating data as it is entered. Written in structured Cobol, the packages are for Z80-based processors including Cromemco, TRS-80, North Star Horizon and Superbrain.

The payroll costs £300, and the "integrated business system" £1,000.

The packages will be aimed at the small business user at first but Horizon director M. Shafique said: "We are considering moving with them into the mainstream market."

Three MicroFocus products in OEM deal

CIS COBOL, the Ansi 1974 standard version of the high level language developed for microcomputers by MicroFocus, has won another OEM deal, this time with Ontel, the New York manufacturer of information systems and display computers.

Ontel is to sell three MicroFocus products on its equipment: Standard CIS Cobol, Compact CIS Cobol and Forms-2.

The Standard CIS Cobol, recently certified by the US Federal Compiler Testing Centre (CW, February 7), needs 48K-bytes of user RAM. The subset of the compiler, Compact CIS Cobol, has been purchased to run on earlier Ontel systems with 32K-bytes.

The third product, Forms-2, is a development tool for use with Cobol which helps the user create screens and programs. The software will be available to Ontel users worldwide, and according to an Ontel spokesman, "will provide an even broader scope of utilisation for Ontel OEM users."

AEG-Telefunken, part-owners of Modcomp, recently bought a 10% stake in Ontel (CW, July 3).

THE BEST THING NEXT TO A MINI-COMPUTER

Mini-computers are amazing things. But as soon as you invest in one the next best thing to do is buy a Chubb Fire Resisting Computer Data Cabinet.
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MICRO NEWS

by Eileen Stainer

Intel prices drop by 40%

PRICES of Intel Magnetics' bubble-memory susbsystem components and boards have been reduced by more than 40%. Further similar reductions for quantity orders will take effect in August 1981 and 1982.

Intel will be able to shift large quantities of the devices this way, although the company does not give this as one of its reasons for making the reductions. It regards the price cuts as a sign that the technology is becoming increasingly popular in the commercial field, and attributes them to better productivity.

The 100-piece price of the BPK72 prototype kit which comprises a one-megabit bubble memory module and six LSI support chips drops 42% immediately to £1,100. For OEM applications the ISBC250 board drops 26%.

In August 1981, Intel plans that orders of 5,000 or more BPK72s will be priced down 40%. The year after, quantities of 25,000 will be reduced another 50% from the 1981 prices.

Even with these reductions, bubble memories will still cost more than their mass storage alternatives like battery-backed RAM and floppy discs.

Nevertheless, the technology is solid state and has high capacity.

LX500 with double memory

AN enhanced version of the Logabax LX 500 Z80-based microcomputer has been announced in the UK. Main memory is doubled to 64K-bytes, and the larger version incorporates double-density minifloppies for a total backing store of 384K-bytes.

With a VDU and printer as shown here, the new version costs £3,500, and the first UK sale has been made to the Severn and Trent Water Authority, which wants it for a pilot budgetary control, forecasting and customer complaints system.

Tandy backtracks with Model III

TANDY'S pocket computer slipped by several beady eyes before a distinct similarity to an equivalent Sharp product was noticed. The company has now admitted that its pocket computer is basically the same device as Sharp's PC1211.

The Japanese company has agreed to manufacture its product with multiload facilities for Tandy, to market with its own TRS-80 label. According to Ted Russel, an ex-director now buyer for Tandy UK, it was not worth the company's while to design and manufacture such a product itself.

Filling a gap

However, Tandy emphasises that its other two new TRS-80 products, the Model III and the colour computer, are US designed and manufactured. Only the former will be available in the UK and that will not be until June next year. The Model III is on a level with the SuperPet, claims Tandy.

In fact Tandy seems to be filling a gap in its marketing direction with the Model III. After the introduction of the Model I, which was developed mainly for the hobbyist, came the Model II advanced business system which, says Tandy, is comparable with the Apple III.

That left a hole in the market for a desk-top general purpose microcomputer system, the Model III. Tandy's line-up is now in the order of Model I, Model III, and Model II at the top.

The TRS-80 Model III will be available in three versions; one with 4K of RAM; one with 16K; and a desk-top version with 32K expandable to 48K. Each version will be in one unit with a 65-key keyboard, a 12-inch video monitor and a power supply. Model II is also housed in one unit with a minimum internal memory of 32K-bytes expandable to 64K.

For £299 the 4K version of Model III is programmable in Tandy's Level I Basic and can be used with all Model I, Level I programs. The 16K version costs about £399 and is programmed in the Model III Basic which includes upper and lower case letters.

The desk-top business computer version has two double-density 40-track disc drives which add another 313K-bytes of storage to the 32K expandable to 48K of RAM. Facilities are available to add two more disc drives to bring the storage capacity up to 626K-bytes [illegible] a built-in RS 232C serial [illegible] face, this version will [illegible] about £1,099.

As the company has [illegible] the Model III is cheaper [illegible] Model II which is selling [illegible] about £2,500, and has [illegible] storage capacity. Model II [illegible] drive up to three 8-inch [illegible] discs, providing 2 megabyte[illegible] storage, and its 32K-byte [illegible] RAM is expandable to 64K.

Storage

Model III Basic is a versio[illegible] the Level III Basic used on [illegible] Model II, but is upwards co[illegible] patible with Level I Basic u[illegible] on the Model I.

However, it seems that [illegible] Model II is closer to the Pet[illegible] than the Model III. The Super[illegible] has 32K-bytes of user RAM [illegible] floppy discs providing eithe[illegible] megabytes or 3 megabytes [illegible] storage. Model II provide[illegible] megabytes of disc storage, wh[illegible] the Model III supplies [illegible] 626K-bytes on disc.

Nixdorf's LK 3000.

Multi-function translator

NIXDORF'S pocket translator, the LK 3000, available in the UK from Phone-Aids in Hampshire, can perform a variety of extra functions for nominal additions to the basic cost of £115 plus VAT.

Apart from translating into 11 languages other than English, including Arabic, for £33 plus VAT per module, the terminal can communicate over the telephone to a computer.

When used with an RS232 interface for £125 plus VAT, and an acoustic coupler, an extra £200, complicated programs can be accessed, data can be checked, orders can be [illegible] (as in our picture above) and software can be scanned or modified.

For an extra £22 plus VAT the terminal can be used as a calculator; for an extra £86 plus VAT as a filing system; and for an extra £60 as an electronic notepad.

Semis in Brighton

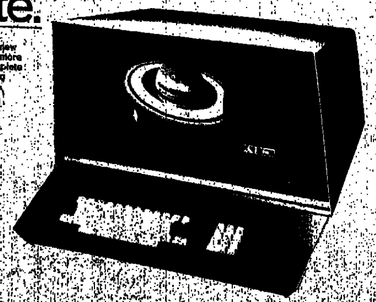
THIS year's Semiconductor International exposition will be held at the Metropole Convention Centre, Brighton, on November 25-27. Technical sessions will cover packaging and defect monitoring, very large scale integrated circuits, automatic test equipment, reliability, processing, electro-optics, photo-imaging and lithography and alternatives to microprocessors.

Supporting dealers

VICE-PRESIDENT and general manager of Apple's European operation, Tom Lawrence, who previously held a similar position with Intel Europe, says that he intends to give the company's European dealers and distributors his full and unqualified support.

16.8 million colour shades are impossible to show in a pretty coloured ad.

So here are 256 in black and white.



Available from Dicoll, AED's new full colour graphics system is more than just a terminal. It's a complete high resolution colour imaging system under microprocessor control with DMA interfaces available for most popular minicomputers.

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DMA interfaces to most minicomputers.
256 simultaneous colours selected from palette of 16.8 million shades.
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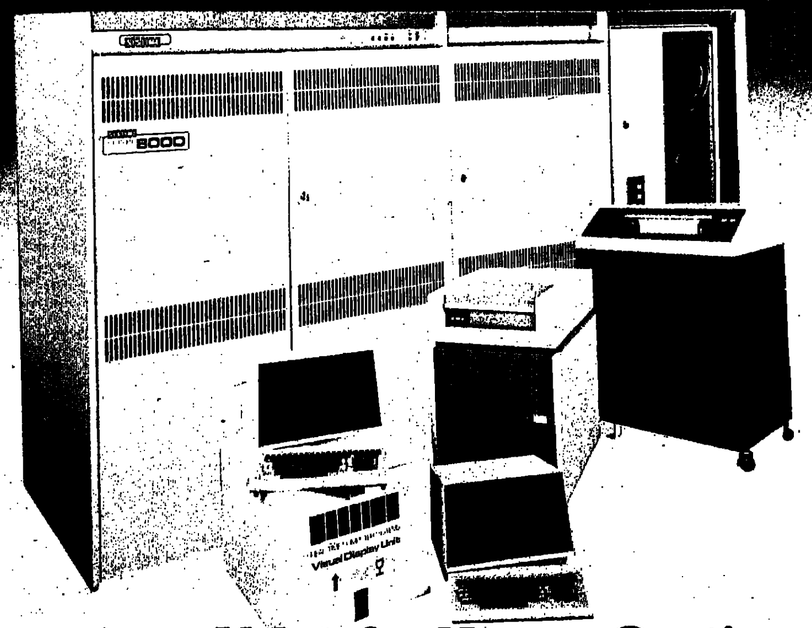
Dicoll Electronics Limited, Sand Down, Kingsland Estate, Basingstoke, Hampshire, England. Tel: Basingstoke (0256) 61161. Telex: 858769

The AED 512 Colour Graphics from Dicoll.

Also available from Dicoll is the Tektronix Monochrome Graphics System and VT100 Colour Video Terminal from DEC.

What Happens when you Systimize a *VAX 11/780



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Systime do a very hot conversion on a VAX 11/780. We call it the Systime 8000 and it gives you real value for money. You get up to 12 MB of low cost MOS memory and multiple, multi-port controllers supporting upgradeable 67 MB, 128 MB, 256 MB and 512 MB drives. The package includes a choice of either 300, 600 or 900 line per minute printers and there's a full range of DEC compatible matrix printers and VDU's.
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* 2 x Systerm printers
* VMS operating system

VAX PAX2 **Special Offer!**
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* 1 x 800/1600 45 ips tape drive
* 32 line interface
* 2 x 600 lpm printers
* 24 x Syscope VDU's
* 6 x Systerm printers
* VMS operating system

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* 4 MB main memory
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* 2 x 800/1600 tape drives
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* 6 x Systerm printers
* VMS operating system

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SYSTIME

PEOPLE and EVENTS

ICL opens Belfast headquarters complex

A HEADQUARTERS complex for Northern Ireland was officially opened by the chairman of ICL, Philip Chappell, and the Lord Mayor of Belfast, Alderman John Carson.

Located at Computer House, Hollywood Road in Belfast, it will cater for the ICL customer base in Northern Ireland. ICL has been in Ulster for almost 50 years, having moved from Castlereagh

A large representative group of industrialists from across the Province was present at the opening.

Prize for a unique program

A CONTEST was sponsored by AFIPS during the 1980 Personal Computing Festival, when personal computing enthusiasts were asked to design unique non-commercial hardware and software applications. The winner was Trateep Amornvitikivacha, who selected as his prize a Houston Instrument's Plot DMP — 2" digital plotter.

Amornvitikivacha's winning entry was a program for translating Oriental Thai into English.

Lucky number

Cashpoint, the Lloyd's Bank computer-linked cash dispenser system, now has 1.5 million cards in issue. Katherine Jones, a nursing assistant from Northampton, applied for the 1.5 millionth card and was presented with a watch, a leather wallet for her card and a Lloyds Bank trophy.

George Snelgrove has been appointed by Redifon Computers as London Regional manager. He joined the company in 1974, and from 1978 worked as Northern Regional manager. Redifon has also appointed a product marketing manager, Mike Burdett, promoted from his position as branch manager for the South East.

New director for Logica

Brian Martin has joined the board of Logica as director, responsible for the management group. His career has involved international experience in economics, transportation and management control, and in 1969 he founded a transport consultancy.

Martin worked for the London Transport board and then as a research engineer at MIT, studying computer based techniques for forecasting travel demand in urban areas. He was also involved in Project MAC, the world's first time sharing project.

For five years he was chief engineer, transportation, for the Greater London Council and then in 1969 founded Martin Voorhees Associates. In 1978 he became international vice-president of Alan M Voorhees Inc, co-ordinating the company's activities throughout the world.

Promotion

AT PERTEC International Chris Scotford has been promoted to district sales manager. Mike James, for two years inside sales support, has been promoted to field sales engineer, responsible for OEM floppy disc sales in the UK. Richard Somerset, formerly field service engineer, is now product support specialist. Newcomers are Marian Fletcher who joins as inside sales support from Infotech; Mark Coakley, who comes in as customer service engineer and Peter Blackford who takes on a new position as spare parts controller.

A COMPUTER terminals company has agreed to sponsor Lancashire Brass, a registered brass band from Chorley, Lancashire. Blackburn-based Terminal Display Systems has provided the band with uniforms which will give the band "an important psychological boost" according to Ian Cuthbertson, Lancashire Brass' chairman.

Prince to present Girl Technician Award

Prince Charles is to present the Girl Technician Engineer of the Year Award, at a ceremony to be held later this year.

The award is sponsored jointly by the Institution of Electrical and Electronics Technical Engineers (IEETE) and the Caroline Haslett Memorial Trust.

Its aim is to focus attention on electrical and electronic engineering as a professionally worthwhile career for women. The prize is a cheque for £250 and an inscribed rose bowl. The award started in 1978 and generally attracts around 20 women. The IEETE has a membership in the region of 19,000, of which only 15 are women.

The closing date for nominations for the award is October 1 and those interested should contact the IEETE secretary at 2 Savoy Hill, London WC2R 0BS.

Isgar Rees

Chris Isgar has joined Data Logic's communications products division as sales executive. He joins from Nolton Communications.

Wyn Rees is sales manager with Videcom. He was previously sales executive with ICL.

Mothercare VP

Christopher Hutton has been appointed vice-president, data processing of Mothercare Stores Inc in the US. He joined Mothercare in 1968 as a trainee programmer at Watford, and transferred to the US in 1977 to head the computer department.

Howard Turnridge has joined Versatec Electronics as a senior engineer. He spent the last eight years with Honeywell.

John Cahill has been appointed director of marketing programs for General Automation. He was previously systems marketing manager for Xerox's office product division in Dallas. He will be based in Anaheim, California.

X-Data has appointed James Coupland, formerly with Hawke-Cramer as printer product specialist, and Brian Metcalf, formerly with KPG, as sales executive.

Cambridge graduate John Yeomans has joined the systems research team at Urwick Nexos. He was previously consultant engineer with Communications Studies and Planning Ltd.

Consultancy partnership

A CONSULTANCY partnership has been formed by two UK information and database specialists, Dr Tony Kent and Derek Barlow. The consultancy is called Kent-Barlow Information Associates (KBIA).

Barlow has been director of the Institution of Electrical Engineers' Inspec database service for the past ten years. Dr Kent has led the Chemical Society's major involvement in the capture, storage and retrieval of chemical information since 1966.

Barlow said that information is "... rapidly becoming a resource and a commodity that can be traded internationally".

KBIA is in Theobalds Road, West London.

Bank promotions

The Royal Bank of Scotland has made several promotions within its head office, electronic data processing division. Norman Irvine, formerly controller, systems development, has been appointed assistant general manager. W. S. Lindsay, formerly manager, computer operations, has been appointed controller production services. J. S. Rafferty, formerly manager, planning and research is controller, systems planning. James Macmillan, who was previously manager, systems, is now controller, systems development.

Roy Armstrong has been promoted to company training manager at Computer Technology, CTL. He joined the customer services division as project manager in 1978.

John Milway has been appointed UK sales manager for the commercial systems division of Computer Automation's UK operation. He was formerly Southern Region sales manager for the same division.

Chris Rigler is national sales and marketing manager for Unistat Computers. He was previously divisional marketing manager at Data Logic.

The BBC has appointed Alan Lafferty to be manager of engineering promotions. Lafferty joined the BBC in 1971. In 1978 he became engineer in the liaison section, engineering information department.

Several appointments have been made by ITT Business Systems' Sales HQ District (Brighton). David Reid takes over as executive manager. Tom Jarvis is market development manager, Peter Jackson is product marketing manager, Carl Spurr is national sales manager for ITT's loud speech equipment, Keith Goodman is national sales manager for the company's facsimile products.

Poole de Lobel

Verity Cattanach Poole has joined Computer Resources to head public relations. She joins from Computer Services where she established and ran the public relations department.

Barry de Lobel has been appointed engineering director of systems house Star Computers. He has been with Star since 1979 and before that spent seven years with Allied Business Systems.

Mark Armitage has joined Computer Automation CSD as support consultant. He was formerly manager of M and S Computer Services.

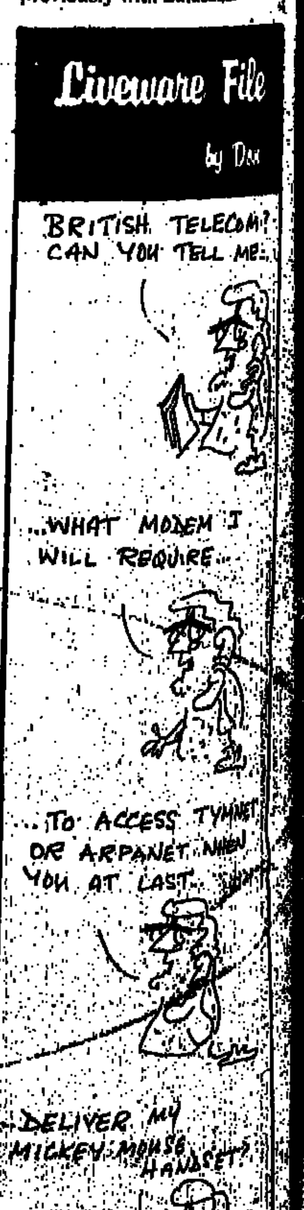
Hans Vissers has been appointed general manager by Documation for their operations in Holland. He was formerly with Honeywell.

Barrie Jeffrey has joined TDS Graphics as salesman for Scotland and the North of England. He has worked as a salesman in the computer field for 20 years, for companies such as Wordplex, Control Data and Autotrol.

Jim Hoare has joined Documation UK as a sales executive within the Southern Region team. He was previously national accounts sales executive with Olivetti.

Tony Connor has joined Program as systems analyst in the software services division. He was formerly data processing manager for Trafalgar Travel.

Mike Loftus is territory manager with Computer Machinery Company responsible for sales in Merseyside, southern Greater Manchester and West Lancashire. He was previously with Datasaab.



DIARY

SEPTEMBER 17
Seminar. Data conversion. Ferranti. London World Trade Centre. (061) 624 0515.

SEPTEMBER 23-26
Micad 80, CAD conference. Micado. Paris.

SEPTEMBER 24
New technologies for information retrieval. BCS Information Retrieval Group. London.

OCTOBER 6-7
Seminar. Digital communications for satellites. Technology Transfer Society (TTS). London. (01) 242 4045.

OCTOBER 9-10
Seminar. Digital communications for satellites. Technology Transfer Society. Amsterdam, (01) 242 4045.

OCTOBER 13-14
Seminar. Digital communications for satellites. Technology Transfer Society. Munich. (01) 242 4045.
Seminar. International technical marketing. Technical Marketing Society of America/TTS. London. (01) 242 4045.

OCTOBER 16-17
Seminar. Digital communications for satellites. Technology Transfer Society. Berlin. (01) 242 4045.
Seminar. International technical marketing. Technical Marketing Society of America/TTS. Paris. (01) 242 4045.

OCTOBER 20-21
Seminar. Digital communications for satellites. Technology Transfer Society. Paris. (01) 242 4045.
Seminar. International technical marketing. Technical Marketing Society of America/TTS. Berlin. (01) 242 4045.

OCTOBER 20-21
Seminar. Computer graphics. Harvard University. London Hilton Hotel. Ms Karen Smolens, Centre for Management Research, 850 Boylston Street, Chestnut Hill, MA 02167, US.

OCTOBER 30-31
Seminar. Strategic planning for information systems. Harvard University. London Hilton Hotel. Ms Karen Smolens, Centre for Management Research, 850 Boylston Street, Chestnut Hill, MA 02167, US.

NOVEMBER 6-7
Seminar. Distributed systems. Harvard University, London Hilton Hotel. Ms Karen Smolens, Centre for Management Research, 850 Boylston Street, Chestnut Hill, MA 02167, US.

NOVEMBER 6-7
Course. Practical guide to the establishment, operation and management of captive insurance companies. Selfridge Hotel, London. Risk Research Group. Alison Rayner, RRG, Bridge House, 181 Victoria Street, London EC4V 4DD.

NOVEMBER 6-7
Minis, micros and terminals, conference. BCS/IIS. Manchester.

NOVEMBER 14-16
More than just techniques, conference. British Production and Inventory Control Society. Blackpool.

DECEMBER 10
Computers in museums. BCS Information Retrieval Group. London.

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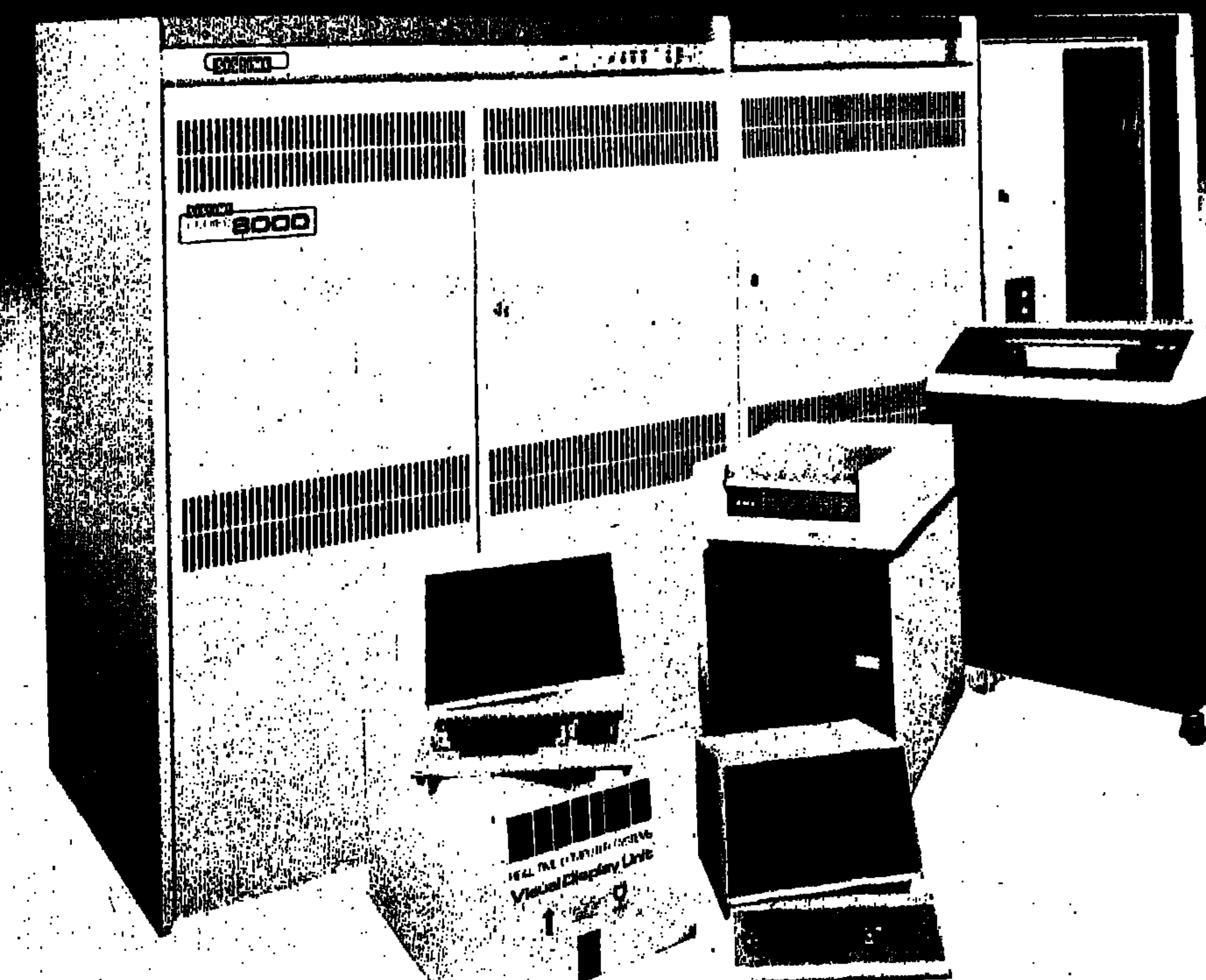

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SYSTIME

OP SPOT

by Bernard A[illegible]

Managing a small, personal set-up

RIGHTLY or wrongly, fairly or unfairly, operations staff often criticise their DP manager for failing to understand their needs and problems.

They say he's too aloof and detached. They might see him for an appraisal from time to time, or get the occasional nod when they pass on the stairs. But, all in all, operator and DP manager just don't seem to have much in common.

Such a description hardly applies to Robin Weldon — the DP manager at Eastbourne Waterworks is neither detached nor aloof.

Conscientious

"We're a small set-up. I've got an operations supervisor who has been with the company for many years and is a great help to me.

"My day starts at 8.30 in the morning when my first job is to see the operations supervisor. I tell her what should be given priority and she tells me about the other work that's on."

The site has three programmers and two female operators who work days only. Main work is billing, a batch application which runs on an NCR Century 75 system.

"Both of my operators are girls and that has advantages and disadvantages. On the one hand, lady operators are very conscientious, while on the other they are very reluctant to work at night.

Night work

"The master file has details of about 90,000 users and a lot of updating is involved. You'd be surprised how much property gets sold and how many people move home in an area like this."

Water rate bills are sent to users every six months, a task requiring 70 hours of machine time spread over three days.

"That calls for quite a lot of night work. Kim, one of my operators, did it on one occasion and vowed 'Never again'. She was a bit frightened because this building makes a lot of strange noises at night."

Fortunately his three programmers have no qualms about working nights and so every six months they turn their hands to operating the system.

"They're very useful operators and they do a very good job for me," said Weldon.

In November or December the site will replace its NCR Century 75 with an NCR Criterion-V-8555M, running under the VRX operating system.

"The new machine will drastically speed up our throughput. At present input is via paper tape and cassette, but on the new machine we will have cassette only.

"All our existing programs will run on the new system and we won't have to carry out any conversion. We expect to phase out the old machine three months after the new one is installed."

The operators will get accustomed to the new machine by means of a course and practical, hands-on training.

"The programmers are going on a VRX migration course which will be held in London. They operate the machine while the operators attend a course in London."

Asked if the company would carry out online updating on the new system, Weldon responded with some interesting comments.

Strong views

"I'm not a great advocate of online updating. A lot of DP managers at the small to medium-size installation want the latest in software just for the sake of it and not because they really need it.

"Anyway, we're not a bank or an airline and so we don't need that sort of system. Online updating calls for very good software if it is to be safe."

Weldon also has very strong views about salesmen, particularly those of stationery and printer ribbons.

He said, "They come into reception and expect to see you at once. I insist on appointments when dealing with salesmen and the like. It's the only way.

Wide experience

"I've been in DP for 21 years and one of the things I've learnt is that at the smaller installation you have to know what is the best and buy it. Quality is cheaper in the long run."

The site orders stationery and other accessories from such "old and established" firms as Smith and Ouzman, and Tullis Neal.

"Their salesmen are good and they aren't at you all the time. If something isn't up to scratch they'll take it back. That's very important."

Weldon's wide experience of the industry includes nine months working at American Express in New York.

That was 12 years ago when he was involved in a feasibility study carried out with a view to bringing programs and systems back to run in this country.

"I learnt quite a lot over there, but quite honestly I don't think much of the Americans or the way they work.

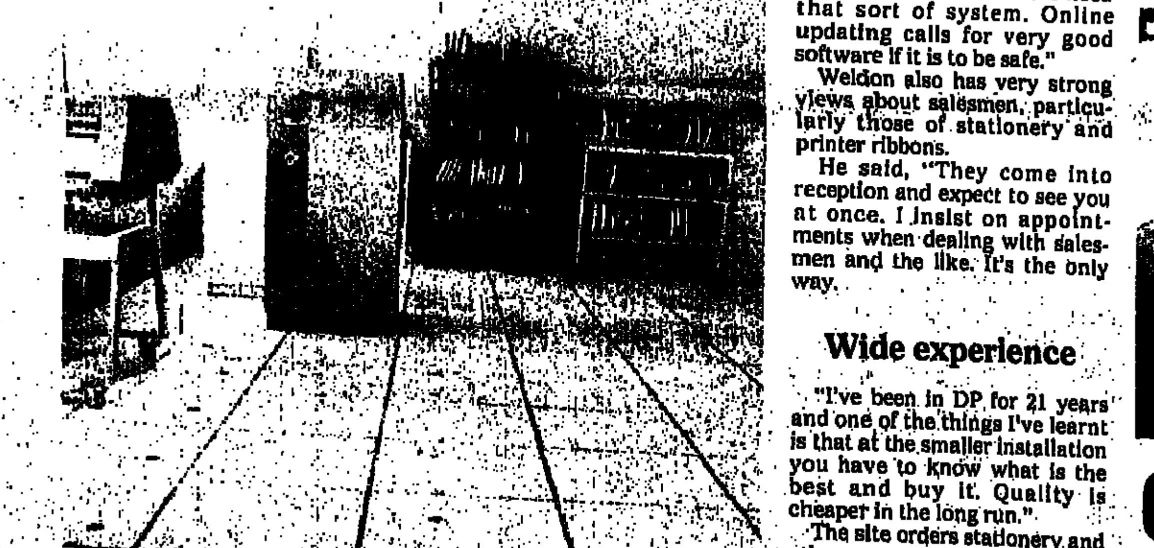
"They talk a lot of puff and don't seem to get much done. There were too many meetings — they love their meetings. The British DP professional is far superior to his American counterpart."

Not very keen on the city of New York, he went on, "You would need nerves of steel to live there. My sister has been over there for 15 years … ears that she's growin… not being able to … streets at night.

"The subway is frigh… it's chock-a-block at … worse still at weekends"

A family man — he … girls and a boy — he … swimmer, and squash … player. "I think it's … keep fit and I quite … half an hour's squash"

Robin Weldon says that Eastbourne is a fine place to work and raise children. The picture shows … Eastbourne pier in the background.



This may not be a very impressive sight at present, but within the next few months the area will be transformed into a computer room housing a new NCR Criterion V-8555M, running under the VRX operating system. The new machine will handle work currently processed on Eastbourne Waterworks' NCR Century 75 system.

Hectic but enjoyable

VARIETY, interest and being kept busy — these are some of the reasons why Kim Tomlinson (left) enjoys working in a small and informal operations department.

The junior operator at Eastbourne Waterworks, Kim says that things are a "bit hectic at times", but that she would have it no other way.

A former VDU operator at the site, she commented, "I work from eight till five and there's no shift work involved. The time passes really quickly here because I always seem to have something to do.

"I fetch all my own stationery from the sta… usually take the trolley … and fill it up at the start … day. The disc packs are … heavy, but you get … ting them around … couple of months."

On the applications … the installation, she … "Applications include … analysis, stores and … payroll first thing every … nesday.

"We input by paper … cassette. Cassette is … because you just load … reader and leave it. You … lot of parity errors with … tape."

Contract workers should speak up for themselves

"WE don't deal with contract operators, simply because they tend to be rather unreliable — it's not uncommon for the contract operator to start a three-month contract and not turn up after the first day.

"Programmers, on the other hand, are reliable. In the vast majority of cases they will honour their contracts."

Comments from the director of a computer staff agency after I had asked why his particular agency deals in programmers and systems analysts and doesn't bother with contract operators.

He went on to give instances of staff going along to sites and leaving in anger without ever mounting a tape or disc.

"After spending a morning at a site, one character had the effrontery to tell the operations manager that the place was a shambles and that his operators didn't have a clue about running the machine.

"The contractor walked out saying that he would find a site more worthy of his skills. He was annoyed because the resident operators wouldn't let him run the system console."

My immediate response was to defend the contract operator, and vigorously, too. I said that he puts up with all sorts of difficulties in travelling from site to site.

The contract operator, I pointed out, often has to put up with inadequate documentation and permanent staff who are sometimes hostile because he earns more than they do.

Criticised

The agency man just wouldn't have it. He insisted that the contract operator is paid to do the job required by the installation. If the site wants him to mount tapes and discs and leave the main console alone, then that's what he should do.

There was a time when I would get quite annoyed when operations staff, whether permanent or contract, were criticised by operations and DP management and other members of the computer industry.

I still believe most of the criticism to be unfair, but now take the view that operations staff bring it on themselves to a certain extent by not speaking up when the opportunity presents itself.

This column is the … in the computer … where operations … forward their views … Your letters and … are welcome … matters relating … computer opera…

Microprocessors in Engineering Design

NELP

Choosing a computer is a question of philosophy

When it comes to the crunch it's all a question of need versus cost. Of course the easiest way is to buy a suit that's too big and then grow into it. Unfortunately it's also the most expensive way. And you always run the risk that it won't fit you properly, now or later.

This is where our philosophy comes in. A NORD computer system sets no fixed limits. It becomes what you yourself make of it. A system of hardware and software modules which can be rearranged or added to when your needs change, regardless of your initial configuration or your application.

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Million bit credit card a possibility

CREDIT cards storing over a million bits of data in a secure, non-erasable form could become a reality following the development of laser technology and a recording material for such storage by a small California company. Drexler Technology, makers of materials for optical discs, has devised a card containing a rectangular panel of plastic on which a banking terminal or the like could write large quantities of information by laser.

Once recorded, data cannot be erased from the card, unlike magnetic cards, but because of its large capacity it could be continually updated for a long time. Thus it would be useful as a bank passbook or a security pass.

Data is recorded in a metal and plastic material known as Drexon, the same as the company supplies to a range of companies that are all developing optical disc storage systems.

A piece of Drexon measuring 1in by 1½in is held in the middle of a card with a transparent plastic cover over it.

Each bit is recorded by a laser melting a very small hole in the plastic, and according to Jerry Drexler, the company's founder and president, a panel that size can hold "easily" one million bits.

Interest

No terminal yet exists for use with the optical card, as Drexler does not build such equipment, but over a dozen firms have shown interest in working co-operatively to develop the necessary hardware, he says.

In addition to its permanency and far greater capacity, the optical card is much more durable than a magnetic one on which there can be no protective coating on the stripe, Drexler says.

The cost would be under 50 cents a card, he estimates. Naked-eye-readable information can also be recorded by making large patterns in addition to the binary data.

Audit trail

The fact that all previous information would remain on the card after it was updated would, for banking applications, provide a useful audit trail, Drexler feels.

For security passes and identity cards, revalidation could take place as often as desired, reducing the risk of fraud. When a card eventually filled up it would be thrown away.

Start of five-year plan for aeronautical network

SEVERAL message switching systems have been ordered by various national agencies involved in the worldwide AFTN Aeronautical Fixed Telecommunications Network used to pass information such as flight plans, aircraft positions and weather reports between air traffic control centres.

ITT Business Systems has already supplied a system capable of handling several thousand messages a day to the West German Defence Supplies Board in Koblenz.

Based on twin General Automation 16/440 minis, the system is valued at £1,200,000 and is the tenth ITT has supplied for use in an aeronautical network out of a total of about 160 systems.

Cable and Wireless is to supply a message switching system based on Digital Equipment PDP-11s to the Department of Civil Aviation in Jordan for operation early next year.

And Philips Telecommunicatie Industrie of Holland is to supply a system to the Swedish Civil Aviation Authority, based on its Aeropp II equipment, in a main office at Arlanda International Airport, near Stockholm, with Aeropp 20 switching sub-centres in Malmo, Gothenburg and Sundsvall.

Interfaced

The Swedish system will be interfaced to the World Meteorological Organisation's global network, as well as to the Nordic Public Data Network and the public telex network.

Over the next five years it is also planned to develop the system to operate as a node in the medium to high speed data network planned by the International Civil Aviation Organisation.

Burroughs extends its CP 5000 line upwards

THE new Burroughs CP 5000 line of communications processors has been extended upwards with two new models, the CP 9558 and the CP 9572, joining the existing CP 9550, launched at the beginning of the year (CW, January 24).

The models are similar in architecture to the B920, launched in the US two weeks ago (CW, August 28).

Main memory extends to 1.5 megabytes on the larger of the two new models, and 1.2 megabytes on the smaller, compared with 640K-bytes on the 9550.

As with the B920, the basic system for each consists of a system control processor, a file processor (that is, an intelligent disc controller), an instruction or applications processor and a communications processor.

Up to four more processors can be added to the B9572 and up to two more to the B9558, and both can support up to 12 communication lines.

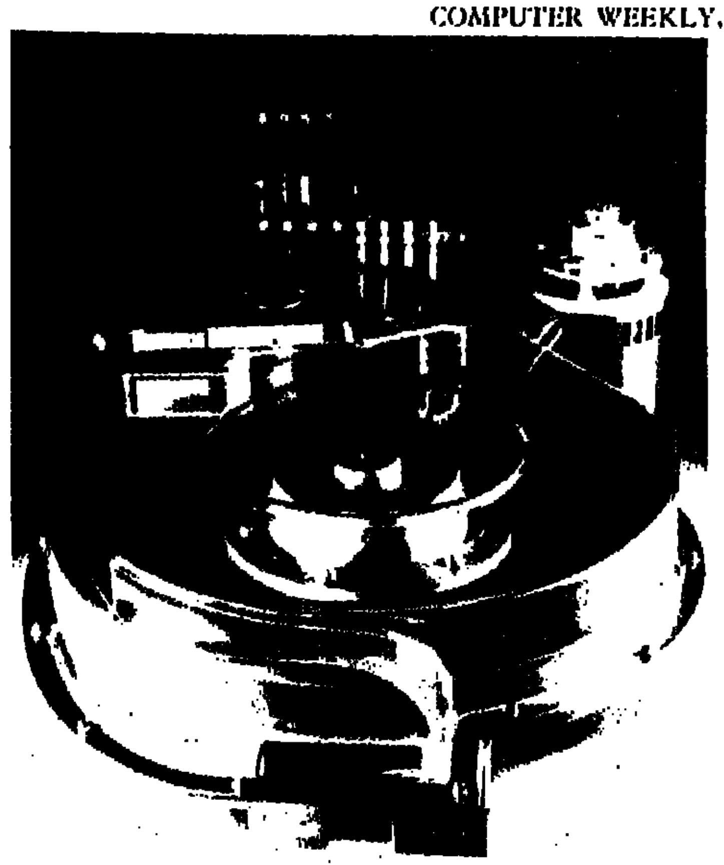
Communication modes supported include X25 packet-switching, IBM SNA/SDLC, Hasp and 2780/3780, as well as Burroughs' own BNA/BDLC.

A typical CP 9558 with half a megabyte of main memory, two floppy drives, 19 megabytes on disc and four lines would cost $39,184. A typical 9572 with 917K-bytes of main memory, six megabytes on floppy and 77 megabytes on hard disc would cost $65,000.

Help with circuit design

A NETWORK of four computers is to be installed at Smiths Industries to assist with integrated circuit design and testing. The master processor, a Systems 32/77 computer, will be supplied by SEL Computers, the Sutton-based subsidiary of Systems Engineering Laboratories, in a £100,000 contract.

Systems 32/77 has 32-bit parallel operation and uses a high speed synchronous bus at 26 megabytes per second. The three support computers are expected to be 16 bit stand alone systems.



The OEM division of Burroughs has launched a series of 14-inch Winchester type fixed disc drives and a sample is pictured here. Called FD210 series, the drives are available in 20-megabyte (FD211) and 80-megabyte (FD214) capacities. They are interface compatible with Burroughs' MD122 6-megabyte dual floppy disc drive, and, like the MD122, have a micro controller to perform many of the tasks normally done by the host system.

General Robotics signs up Wilkes as UK agent

GENERAL ROBOTICS, the US company that is suing its former UK distributor, Karlin Computer Systems (CW, August 21), has appointed Wilkes Computing of Bristol as the new firm to sell its Digital Equipment LSI-11 based systems in the UK.

The two main General Robotics systems to be sold by Wilkes are Gemini, which comes with floppy disc storage, and Super Gemini which provides a 10-megabyte Winchester disc drive.

Tony Bigwood, general manager of Wilkes Computing, told Computer Weekly that Wilkes would be selling a comprehensive package of commercial software with the General Robotics hardware. The package covers order entry, stock control and accounting and is based on software from the US firm, Mini Computer Business Applications of Los Angeles.

Bigwood said that Wilkes had produced an "Anglicised" version of the US software which it had already sold to more than 200 DEC users in the UK.

On the question of field service for the General Robotics hardware Bigwood said that Wilkes would be appointing a third party maintenance firm.

Key-to-disc boost for PAYE centres

WHILE the government agonises about what approach to take in the computerisation of PAYE records, the two Inland Revenue computer centres in Scotland and Yorkshire that have for some time been handling PAYE remittance processing are to be equipped with additional key-to-disc equipment from their existing supplier, Redifon Computers.

Redifon is to supply two of its Keycheck systems to the centre at Cumbernauld and three to Shipley, Yorks.

Both centres have ICL 2000s operating in batch mode, processing PAYE payments from employers. They do not maintain and update individuals' PAYE records which is the aim of the current much publicised Inland Revenue project.

Redifon's main competitor, CMC, is supplying its Sovereign key-to-disc kit to the other big Inland Revenue computer centre at East Kilbride in Scotland. Ten years ago it was the first and only centre to go live under the original scheme for putting PAYE records on to computers.

Killed

The scheme was killed by the Heath government. It would have involved about a dozen batch systems whereas the current plan calls for the online interactive updating and interrogation of PAYE records.

A few weeks ago the government decided to look again at the approach to be taken and froze the plans to implement a network linking 12 big regional centres.

Firnberg to speak on information processing

DAVID FIRNBERG, managing director of Urwick Nexos, will speak on the importance of information processing to senior management, and David Cox, systems manager of W. H. Smith, will explain how his company implemented a cost-effective and reliable data network, at the first of a series of six seminars on Managing Communications to be held at the Carlton Tower Hotel, London on Thursday, September 18.

The second seminar in the series, being organised by Mills & Allen with Communications Studies and Planning, is to follow on November 26 with speakers including British Telecom's managing director Peter Benton, and director of business systems Dr Alex Reid.

The four remaining seminars are planned for the first half of next year on themes including communicating money and network planning. The fee for each is £126.50, with a 20 per cent discount for the second and subsequent delegates, or for those attending all six seminars.

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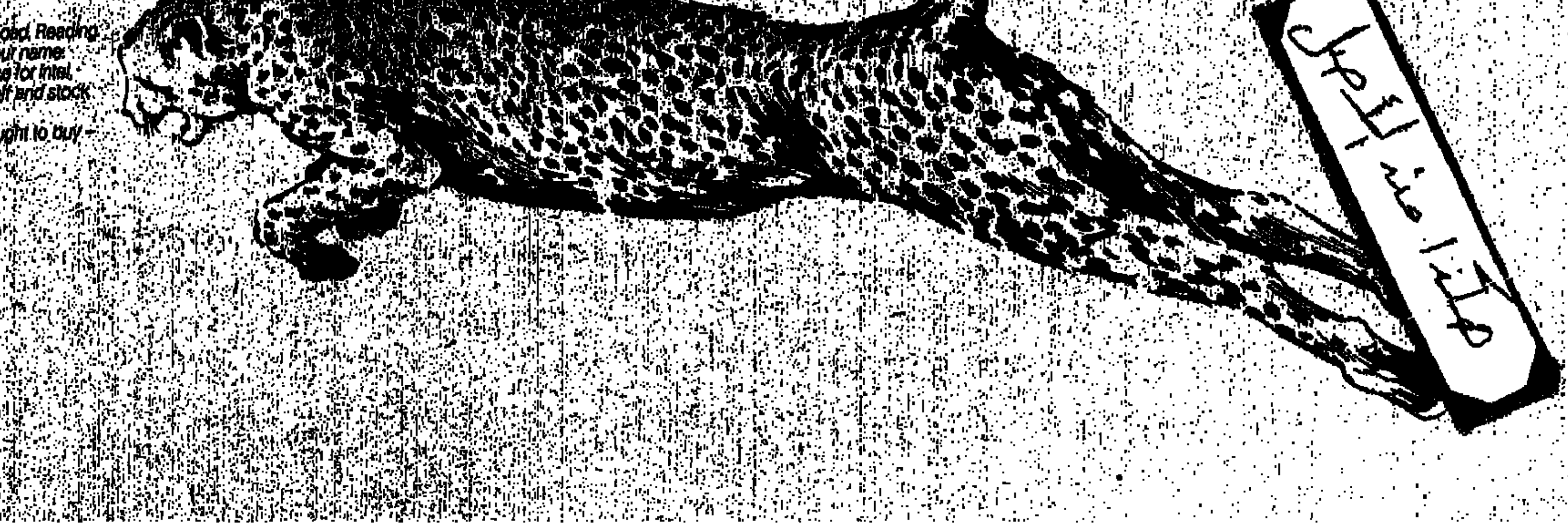

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COMPANY NEWS

Easing the jobs crisis

COMMENT

WITH unemployment over the two million mark and minimum lending rate looking stuck at 16%, it is hard to find grounds for optimism anywhere. The next round of dire predictions about permanent post-industrial unemployment and the problems of sharing the wealth generated by the working few among the jobless many, are beginning to pour off the presses.

The fact that the majority of readers of this paper are likely to be among the "fortunate" few with cast iron jobs for life on even the worst-case predictions, hardly does much to lift the gloom. Who wants to live in a world where to work is to be resented?

Much of the discussion tends to ignore the fact that the problem is not confined to the UK, but affects the whole of the developed world. Indeed the likelihood is that backward Britain with its wage rates still low by international standards, will bear the brunt of the crisis later than other, more advanced countries.

Objections to new technology on the grounds that it kills jobs is not only absurd, since even if we do not apply it our competitors will, but also misplaced. The biggest generators of new jobs over the past generation have been high technology companies, many of which, like Racal in the UK and Digital Equipment in the US, grew from very humble beginnings.

Ventures like Future Technology Systems which will create 140 new jobs in Scotland are extremely welcome, and we need more of them. Ironically, the biggest handicap faced by the UK computer industry is shortage of trained personnel.

The computer and related industries can do plenty to alleviate the problems of employment in the medium term once there is a recognition that propping up moribund industries only makes the problem worse, and that a concerted effort to encourage and foster new technology companies is made.

What is most needed is the kind of imagination applied by companies like F International which almost single handed has taken the work into the home, imagination sorely needed to solve the Catch 22 highlighted on Page Six this week — that people off TOPS courses are finding they can't get a job without experience, and can't get experience without a job.

Dataproducts' profits leap 62%

AFTER a shaky financial period last year because of problems in getting new printer models into production, Dataproducts has announced impressive results for the first quarter, ended June 28, of its current financial year.

Compared with the first quarter of 1979 turnover was 44% up at more than $60 million while net profits saw a 62% increase to $3.6 million.

Even more promising was the order backlog figure of $130 million, which was $55 million higher than a year previously.

Amdahl offer

AMDAHL Corp is offering 1.35 million new shares on the American Stock Exchange, and selling 650,000 to Fujitsu.

Modcomp shares listing shows clean bill of health

WHILE Modcomp awaits the results of a US government probe into its financial affairs, the Fort Lauderdale, Florida, firm has filed an application for its shares to be listed on the New York Stock Exchange from the middle of September.

At the moment Modcomp stock is simply traded "over the counter".

Modcomp chairman Lex Giles said, "We believe that listing on the New York Stock Exchange will broaden the group of investors and institutions interested in the company."

But Modcomp's move also indicates that the protracted investigation into its affairs by the US government's Securities and Exchange Commission is likely to be concluded in a way that gives Modcomp what amounts to a clean bill of health.

Giles discussed the SEC investigation in an interview in Computer Weekly a few weeks ago (CW, August 7).

The SEC became curious about Modcomp's financial affairs four years ago when the firm made a $4 million loss on a turnover of $7 million in its 1976 second quarter. The SEC suspected that the losses might have been the result of Modcomp's practice over a three-year period up to 1976 of sometimes adding orders to revenues before shipment. Although there was a lot of evidence that this was not the reason, the SEC ordered Modcomp to completely restrate its revenues for 1973 to 1976.

Earlier this year Giles did not discount the possibility of the SEC imposing a consent decree restraining Modcomp from employing such practices in the future, and admitted that such a ruling could lead to Modcomp being sued by some of its shareholders.

The application for listing suggests that a consent decree is now unlikely.

More worrying for Modcomp now must be its sluggish financial performance over the last 18 months, in particular over the first two quarters of the current financial year which have both seen reduced profits compared with the previous year and turnover figures that show a very slow rate of growth.

Giles has blamed the company's poor start to 1980 on the long lead time on orders placed last year and has expressed confidence that the fourth quarter will be the most profitable yet for Modcomp.

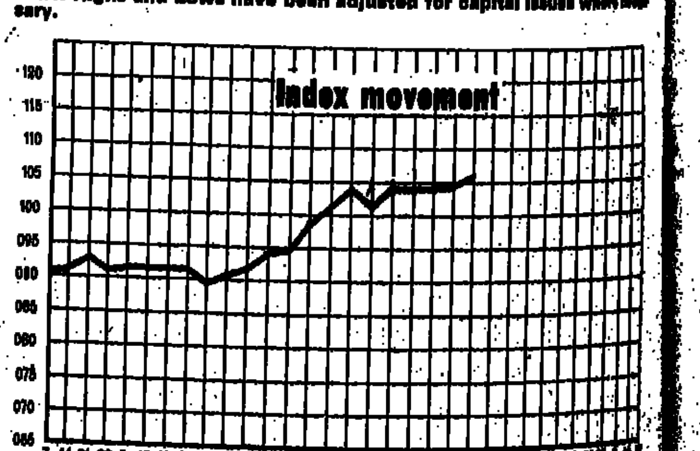
CW SHARES TABLE

Date: 29/8/80 — Index: 106.19 Change: +0.21

Pence 1980 High	Pence 1980 Low	London Stock Exchange Stock	Pence Price	C'nge
476	230	A Comp Tech (25p)	466	−10
43	28	B Bov Kent (25p)	30¾	+ ½
£37	£28⅛	Burroughs ($5)	£27⅛	−£ ⅝
78	41	Chloride (25p)	41	− 6
120	84	Chubb (20p)	85	− 1
100	72	Cole (R.H.) (25p)	72	− 4
835	640	De La Rue (25p)	828	+33
180	148	Extel (25p)	166	+ 5
416	234	Ferranti (50p)	415	+16
496	338	GEC (25p)	480	− 6
£43¼	£30⅝	Honeywell ($1.50)	£37½	−£1½
£31	£23	IBM ($1.25)	£27¼	−£ ⅛
178	115	ICL (25p)	178	+ 6
81	64	Kalamazoo (10p)	79	− 1
276	203	Kode Inter (25p)	276	+ 6
£26¾	£20⅛	Motorola ($3)	£24⅛	+£ ⅛
270	102	Muirhead (25p)	138	−10
£111	£76	NCR 4% 83/88	£97	−£2
£182	£126	Perkin-Elmer 4%	£182	+£22
470	366	Philips Lamp (Fl 10)	366	−14
247	108	Plessey (50p)	241	− 6
296	190	Racal Elect (25p)	286	+11
97	65	Rediffusion (25p)	97	−
£13½	£10⅝	Rockwell ($1)	£12½	+£ ¼
£55⅛	£40⅞	Schlumberger ($1)	£55½	+£ ⅛
£26⅛	£18¼	Sperry Corp ($0.50)	£22	−£ ⅜
£21	£16⅛	TRW Inc ($1.25)	£19	−£ ⅛
358	202	Thorn-EMI (25p)	358	+ 4
£26¼	£21⅛	Xerox ($1)	£24½	−£ ½

$ 1980 High	$ 1980 Low	New York Stock Exchange Stock	$ Price	Chg
20¾	16⅝	AM International	[illegible]	[illegible]
27⅞	17¼	Ampex	[illegible]	[illegible]
46⅝	33⅛	Automatic Data Proc	[illegible]	[illegible]
84	62⅝	Burroughs	[illegible]	[illegible]
26⅛	16⅝	Computer Sciences	[illegible]	[illegible]
71	46	Control Data	71	[illegible]
87	59½	Digital Equipment	[illegible]	[illegible]
45	28¾	Harris	[illegible]	[illegible]
75¼	53¾	Hewlett-Packard	[illegible]	[illegible]
97⅝	68¼	Honeywell	[illegible]	[illegible]
89½	56¼	Intel	[illegible]	[illegible]
68⅝	51⅛	IBM	[illegible]	[illegible]
18⅞	11½	Memorex	[illegible]	[illegible]
61⅛	42¼	Motorola	[illegible]	[illegible]
38⅛	17¼	National Semi	[illegible]	[illegible]
78⅛	53⅛	NCR	[illegible]	[illegible]
58	37	Perkin-Elmer	[illegible]	[illegible]
30⅝	28	Rockwell Inter	[illegible]	[illegible]
135	86	Schlumberger	[illegible]	[illegible]
65¼	47⅜	Sperry Corp	[illegible]	[illegible]
21	15⅝	Storage Tech	[illegible]	[illegible]
70¾	28⅝	Tandy	[illegible]	[illegible]
70	43⅞	Tektronix	[illegible]	[illegible]
121	86⅛	Texas Instruments	[illegible]	[illegible]
46	30	TRW	[illegible]	[illegible]
18¼	6¾	Wyly	[illegible]	[illegible]
65½	50⅛	Xerox	[illegible]	[illegible]

The table shows the closing prices in London and New York at the end of last week. The share index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted for capital issues where necessary.



Format sets up four companies

UXBRIDGE-BASED message switch maker Format Communications has restructured its 20-man operation to tackle an expanding market. Four operating companies have been set up under a holding company, separating the manufacturing, sales, leasing and peripherals supply activities.

A European sales office was opened in Paris last month with a staff of three, while the Manchester office opened in February, about the time that the ten-year-old company dropped its original name, Computer Electronics, in favour of Format Communications, the name on its products.

Sales so far this year have reached 20 systems, equalling the total for the whole of last year. Three types of system are offered: a floppy disc based system with a TTL processor which starts at £5,000 and handles two telex lines; the £16,000 MRS100-8 which uses hard discs and a similar processor; and the MRS100-16, the latest model added earlier this year, which starts at £32,000.

This uses a Texas Instruments 990/10 16-bit processor to handle up to 256 lines, provide daily and monthly statistics of calls, store up to 3,000 telex numbers and 500 group addresses and provide store and forward transmission of messages with timed delivery or up to four levels of priority.

Although its first standard product was built four years ago, the company's main role has been building special systems to order. Production engineer David Porter has taken charge of the manufacturing division with the aim of putting production on an "off-the-shelf" basis. He joined the company earlier this year after working for Olivetti and the British Aircraft Corp.

The group managing director is the company's founder Dennis West.

Compuscan faces $6.5m loss

OPTICAL page reader and text editing systems manufacturer Compuscan has announced that it will report a $6.5 million loss for its 1980 fiscal year ended May 31, 1980. The company attributed $4.7million of the loss to its text editing products which are to be discontinued.

Compuscan, based at Teterboro, New Jersey, is in the middle of merger talks with Hendrix Electronics of Manchester, New Hampshire, another builder of page readers and text editors.

Compeda 'in profit by next summer'

COMPEDA, the NRDC subsidiary that markets computer aided design software is still running at a loss, but hopes to be in profit by next summer according to managing director Keith Trickett.

Compeda made a loss of about £450,000 on a turnover of £1 million during its last financial year ended March 31, but has just been awarded a $250,000 contract by General Electric in the US for integrated circuit design software.

Expansion

Compeda's projected turnover for 1981/82 is about £3 million and the company's growth will be helped by an additional £1.65 million of capital from the NRDC.

Its declared aim is to become one of the top five CAD companies in the next five years.

Trickett pointed out that Compeda was now free to handle CAD products developed by private enterprise, including the Dragon two-dimensional drafting package originally developed by George Wimpey. Compeda was in the advanced stages of negotiation for a number of other products.

The main Compeda product is the Gaelic design package for ICs and PC boards.

Outlining Compeda's expansion plans, Trickett said that full training and demonstrating facilities were to be set up at Compeda's New Jersey and Munich offices similar to existing facilities in San Francisco.

According to Trickett, several new offices will be opened, the first probably at Houston, Texas, and further offices are planned in the US and Europe.

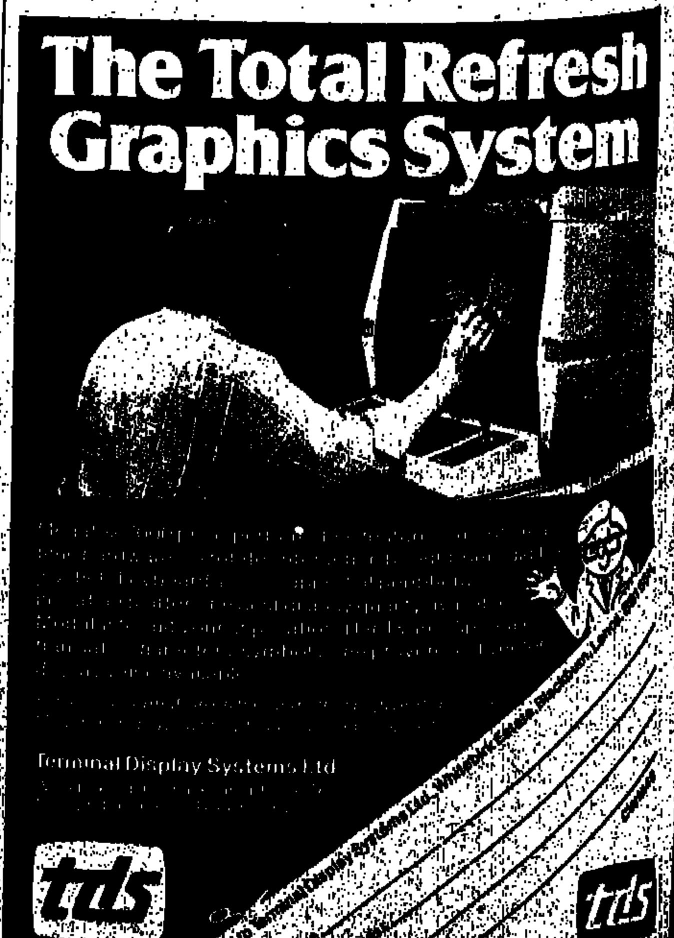
Worldwide staff will be doubled to 100.

Plessey back on course

AT last the good news is coming thick and fast from Plessey. The long-running "recovery situation" has emphatically recovered, and first quarter (to June) figures show pre-tax profits up a storming 42% at £19.9 million compared with the same period figure last year on sales up 14% at £193.5 million.

The order book contains more good news: up 28% to a record £1,061 million.

Business at home, primarily with the Post Office, led the way, but despite the strength of sterling, Plessey managed a 35% increase in overseas profits.



Viewdata will hit US classified ads market

THE end of this decade will see the US newspaper classified advertisement market being hit hard by the advent of electronic Yellow Pages provided by viewdata-type services. If they take off it will be mainly because telephone companies will find it cheaper by then to equip their subscribers with viewdata terminals than to hand out free phone books.

These predictions have been made in an analysis* that forms part of a special free issue of the Videoprint newsletter, a twice-monthly offering published by the market research consultancy, International Resource Development Inc, on behalf of Videoprint's editor, Alan Brigish.

The analysis refers to the trials recently run by telecommunications giant AT&T (CW, September 6, 1979) in the Albany, New York, area involving low cost display terminals being used to access telephone directory information.

Based on a Digital Equipment PDP-11/45, the system has been described as "Prestel-like" but far less sophisticated than the UK's Prestel.

The motivation for AT&T to introduce viewdata-based telephone directories, according to the analysis, is that the amount of paper needed by AT&T for its paper directories will grow from 300,000 tons in 1979 to 500,000 in 1985 and that over that period the cost per ton is expected to soar from $450 to more than $800.

But the cost of implementing videotex services will also be enormous and not justified by telephone directory services alone. So AT&T will need to add electronic Yellow Pages and get a share of the US total classified advertisement revenues generated by newspapers. They come to a formidable $4,600 million at the moment and the Videoprint analysis sees electronic Yellow Pages and other related forms of electronic advertising taking up to 25% of this business.

The analysis predicts that the three years 1981/3 will see, respectively, the first implementation of graphical data retrieval, then daily promotions and sales information, and in 1983 retrieval of TV commercials on demand.

The latter facility will not be available nationally until 1985 but by then electronic Yellow Pages will be on the way to taking away 30% of newspapers' classified revenues, says the analysis.

*Videoprint Newsletter with Electronic Yellow Pages analysis. International Resource Development Inc, 30 High Street, Norwalk, Connecticut, 06851, US. Tel: 0101/203/866/6914.

NASA gives $1 million telecomms contracts to TRW and Hughes

THE US National Aeronautics and Space Administration, NASA, has awarded contracts to TRW's Defence and Space Systems Group and the Hughes Aircraft Company to develop satellite communications systems which will operate in frequency ranges five times higher than those now used for commercial telecommunications.

The contracts are each for one year and $1 million.

The new satellite systems will operate in what is known as the Ka-band, the 20-30 gigahertz (GHz) range. Today, most telecommunications transmissions travel over either the C-band (4-6 GHz) or the Ku-band (11-14 GHz).

Unexplored

With the exception of some Japanese experimental satellite programs, the Ka-band is unexplored territory. But NASA officials believe that the new band range will be needed, and soon. Western Union and ITT studied future US telecommunications demand, and predicted a fivefold increase in this demand by the end of the century. By that time, the studies conclude, both the C-band and the Ku-band will be saturated.

The new systems to be developed by TRW and Hughes will consist of a network of ground stations connected via two satellites which are scheduled for launch aboard the Space Shuttle in the late 1980s.

BCS seminar on office-of-future careers

CAREERS in the Office of the Future is the title of a seminar that will examine the skills likely to be required once information technology is used widely in offices.

Organised by the British Computer Society's Computers and Employment Group it will be held on the afternoon of Monday, September 29 at the Bowater Conference Centre in Knightsbridge, London, starting at 2.00pm and is open to anyone prepared to pay £3 at the door.

Urwick Nexos, the training consultancy specialising in office technology, will play a major role. A senior consultant with the firm, Caroline Hayman, will talk about the new skills that will be required for working in the electronic office and the kinds of new jobs that will be created.

Urwick Nexos managing director, David Firnberg will look at ways in which these requirements can be met.

Another presentation will look into the ways in which the educational system is responding to these requirements and there will also be a brief technical overview of office technology covering areas like word processing and facsimile transmission.

Union representatives will be present at the seminar to give their views during the discussion period.

The Format Communications MRS1600-16 (see Company News, page 14) is much more than a simple message switching system. Driven by a Texas Instruments 990/10 microcomputer, the system, when equipped with VDUs as shown, can form the heart of an automated office information centre, handling additional tasks like word processing.

Rosy future for US home time sharing

TODAY there are about 500,000 personal computer owners in the US and, for less than the cost of a floppy disc drive or a printer, they can subscribe to consumer information services. Equipped with a computer and a telephone coupler, they can use these networks to gain access to large databases.

The future of these services looks bright. Total annual sales from home time sharing service use could exceed $1,000 million by 1990.

There are two commercial networks for personal users in the US. They are Source and Compuserve Information Service (CIS).

Subscribers

CIS uses 21 Digital Equipment PDP-10 and PDP-20 mainframes for its 700 commercial time sharing customers, and it now uses one PDP-10 to handle its 3,500 CIS subscribers.

Source has two Prime 550 computers. As its subscriber base grows, the company will rent additional computer time from Tymshare, who will also link Source with 200 US cities via its Tymnet packet communications network. Source is presently linked to about 200 cities via GTE Telenet. Tymnet will bring Source to many small towns that are bypassed by Telenet.

Source users pay a $100 registration fee. They then pay $15 an hour, or $25 a minute, for online time during peak weekday hours (between 7 am and 6 pm). At other times, the hourly rate is $2.75, about $.05 per minute. The minimum monthly rate, charged even if the subscriber does not use Source, is $5.

Accessed

Source can be accessed through most popular desktop computers, including Radio Shack, Apple, Commodore, Exidy, Texas Instruments, Heath and Compucolor. In all cases some additional hardware, such as a modem and an RS 232C interface, is needed.

Source database includes information from United Press International news service, New York Times consumer database, several major newspaper syndicate services, application software packages and travel and shopping services.

Radio Shack is shortly to sell an alphanumeric keyboard with a built-in modem and 4K of memory, which can be used to access these systems.

Called the TRS-80 Videotex, it will cost about $400.

—HESH WIENER

What makes the Anadex DP-8000 printer a first choice for over 18,000 users in two years?

- Fast bi-directional printing on stationery ranging from small labels to 5-part sets.
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- Long-life ribbon giving an economic 6 months use.
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Pressure is growing for data comms standard

by Andrew Hinchley

It is now possible to buy a network "off the peg," as West Germany has done. But there are uncertainties over the future development of networks.
Here, Andrew Hinchley looks at some of the problems which include tariffs, several services existing together and requiring separate access, and voice/data networks.

He also sees more pressure for standards and the threat posed by regulatory control of private networks.
Hinchley is a researcher in data communications at University College London.

THE development of manufacturer independent data networks in the Seventies seemed a natural replacement for leased line point-to-point working and proprietary system-oriented networks. In the event, progress has been much slower than expected and many data communication facilities currently being put together will bear a strong resemblance to those of a few years ago.

Slow progress can be attributed to a number of factors. First — and here the UK is a definite example — the introduction of public data network services has taken much longer than expected.

Second, other uncertainties have been present — the tariffing of PTT communications, the possibility of several data services existing separately, and requiring separate access, and long term, the possibility of further change when integrated voice/data networks are introduced.

Deterrent

Finally, in Europe the possible enforcing of regulatory control on private data networks used by more than one organisation has also been a deterrent.

Computer manufacturers have developed their own networking architectures fairly extensively over the last few years, but the take-up in Europe has been limited. The prospect, if not the reality, of manufacturer-independent networks has been a restraining factor.

During this year a number of public data networks supporting the X25 packet switching standard have opened or are scheduled to open. Euronet, the EEC sponsored network linking bibliographic centres opened officially earlier this year. This project has been a long time coming to fruition having been originally planned in 1974/75.

It is now no longer necessary to individually commission network design from scratch, and thus West Germany will be installing, this summer, a 20 node X25 network from Northern Telecom — a fast gestation period made possible by buying off-the-shelf equipment.

It is now no longer necessary to individually commission network design from scratch and thus West Germany will be installing this summer a 20 node X25 network from Northern Telecom — a fast gestation period made possible by buying off-the-shelf equipment

The UK national nine node network, PSS, was due to have been opened earlier this year, but currently awaits completion of its switching software which, although based on the US Telenet system, is being developed specifically for PSS.

A nine node network is also planned in Japan for this year with the network switches having been ordered from three different manufacturers. This has resulted in a specification of network nodes independent of any manufacturer allowing the PTT to choose between its suppliers in the same way that is planned for the System X digital telephone development in the UK.

All these networks provide an X25 virtual call service with charges based on call duration, call data volume and call set-up together with charges for line access.

Different charging formulas have been derived for different networks, resulting in wide variations in charges for the same use.

In each case, PTTs have made estimates of the traffic mix expected and set charges to recoup their investment over an estimated lifetime of the network.

In Canada the anticipated RJE and batch traffic has not materialised and network usage is limited to terminal access to interactive services of various kinds. Certainly in the UK, the relative cheapness of leased lines would deter RJE users from swopping to a packet network.

Advantage

A potential advantage of the public network is the need to order only one line per site to the public network, rather than ordering a proliferation of private lines between sites.

In the UK, with the delay on private lines sometimes stretching to 18 months or two years, the public network would seem to offer a considerable advantage here, unless the delay in obtaining new access lines to the public network is also lengthy.

Considerable effort is being expended by the PTTs to get computer-based message services started. In Canada a second packet-switching network has been installed which uses the same switching services as the existing network, Datapac, but provides a message service designed as a direct telex replacement.

Messages are held at the local exchange and are accessed by terminals which may have optional printers attached.

The system is designed for use within a single business as well as the more obvious inter-organisation telex-style use.

Every user has a defined profile which indicates whether that user is confined to correspondence within part of the organisation, the whole organisation, or can send to a wider group of subscribers.

Internationally, attempts are being made to standardise on character sets and formats for message exchange and the resulting "teletex" standards will have applicability over a wide range of possible functions including communicating word processors and the developing electronic office area. UK plans for public services in this area await the production of a CCITT teletex standard.

Private

Within Europe the planned provision of public data-networks has meant a tightening up by PTTs on the introduction of new private networks. This has been noticeable in a change in attitude to Swift, the inter-bank network, and elsewhere where there is more than one organisation involved in using the network.

In the UK this has particularly affected the development of a universities network or the further development of the Science Research Council network.

There is clearly sense in a national service which shares resources across a wide user population just like any other utility.

However it is necessary for the charging formulas levied to reflect the very different requirements of that mixed user population. The result of this policy will be two very different sorts of private network.

For single organisations, it will be possible and probably economically desirable to build their own networks.

The geographical aspects of a company's operations and the exact nature of its business will dictate the need for a network much more than sheer size. The planning of a network also implies a high level decision on shared communications resources which will only be feasible in organisations operating in a fairly centralised fashion.

A number of networking packages now exist for such an organisation. Where character traffic is being handled, microprocessor switching systems such as the Case or EMS systems will be appropriate.

Where mixed terminals and general system access is required then an X25 network will be a possible off-the-shelf solution and in the UK there are currently at least four suppliers: Plessey, GEC Computers, Northern Telecom and Tymshare who will install X25 networks.

Good interoperability with the public network service for back-up and general access to other users should be a major benefit of this approach.

Novel designs

The other emerging network type is the local network organised for single site access. Here, the advantages of short distances with the use of private circuits has encouraged novel designs such as the shared cable of the ethernet and, in the UK, the development of the Cambridge ring which is now in use at Cambridge University, Kent University, and University College London.

These designs offer high bandwidth low cost networking where a reasonable number of processors on a single site wish to share resources. Although some of this work still remains in research labs, commercial sources of local networks will appear in the not too distant future.

Standards are obviously essential to communicating systems, and the more widely any particular standard is accepted, the greater the potential benefit. The development of computer systems has been, and still is, plagued with a lack of standardisation in almost any area other than programming languages.

The CCITT standard X25 represented a major step forward in 1976 although as indicated earlier in this article it is only now in 1980 that the availability of X25 networks is starting to widen. Some of the flaws in its specification have been used to belittle the achievement, but it still can be seen to be a major forward step.

The terminal protocol accompanying X25, however, is a rather less successful step in that only the simplest of terminals are supported by its specifications. Within the UK, much energy has been spent on a file transfer protocol — the Network Independent File Transfer Protocol which promises to be immediately useful to prospective PSS users.

More generally, work has been going on within the International Standards Organisation on a fairly general model of networking. This work is due to continue for some time leaving a temporary vacuum in the standards arena.

In particular there is a requirement to define the communications service provided by a connection-oriented network such as X25 in a way that could be superimposed on a variety of networks.

To fill the vacuum a UK proposal exists to define a transport service, while in the last few months the European Computer Manufacturers Association has rushed through a proposal for a rather more complex transport protocol. Currently users urgently require a resolution of transport level standardisation.

Pressure for standardised data communications will continue as long as the number of terminals and computer systems purchased grows. However the major boost will still be the development of new information services.

Access

Although the PTTs and defence organisations make use of a variety of media, the normal user has found difficulty in gaining access to other media.

For instance with micro-wave circuits, line-of-sight limitations mean that intermediary repeater stations need to be constructed bringing immediate problems such as planning permission quite apart from overall licensing problems on such circuits.

Radio circuits are more promising since several suppliers of radio data communications exist and a number of interesting applications are under way.

Reporting tidal movements from the middle of the North Sea is one that comes to mind. The integration of radio data traffic with terrestrial data networks is a topic of immediate concern to the military.

Economies

The use of satellites has been limited not so much by regulatory issues as by the costs involved. The recent installation of a 3 metre dish at the Rutherford Laboratory in Oxfordshire (CW, March 13) represents a step in the right direction.

It is part of scheduled use of the OTS2 satellite by a variety of private organisations. Having brought down the cost of the ground station, economies in the use of the satellite itself can be achieved by applying sophisticated channel sharing algorithms. The joint US-UK-Norway Atlantic packet satellite experiment has demonstrated the possibilities (CW, January 3).

Pressure for standardised data communications will continue as long as the number of terminals and computer systems purchased grows. However the major boost will still be the development of new information services.

The electronic office, and information services such as Prestel, have for a long time indicated the potential. It is clear that the really large-scale changes which application of these technologies imply will take well into the 80s to take effect.

Welcome to the company barbecue!

DP's Olympics is still wide open

The channel leap! Entering the spirit of Computastars is Dutch journalist Albert Lubbers who works for Computable. While Albert's team did not qualify in the Dutch heats, he is expected to be at the final to report on the day's events.

WHILE the standards at this year's Computastars qualifying heats have been higher than ever, the contest is still wide open with no clear leader in sight.

The Dutch dimension must add to the spice as over 250 competitors battle it out for the honours.

The final is being held at New Alexander Park Stadium, Perry Bar, Birmingham on Saturday, September 13. It starts at 10.00 am and is likely to finish at about 7.00 pm when prizes are to be presented.

The final is designed to test all-round athletic skills, not competitors' individual attributes in certain events. Organiser Gordon Cairns is keeping details of the events secret until the day.

Only 35 points separated all the finalists during this years regional heats and there are quite a few names to watch out for.

There will also be some well known names missing.

Case's Gail May won't be there as her team failed to qualify: last year she managed to scoop up the Computer Weekly Rosebowl and the individual ladies' title for the second year running.

Strong bid

However, we can expect a strong bid for honours from both Rowntree Mackintosh's ladies' and men's teams. In the Northern heat, the ladies amassed 232 points with second placed Reckitt & Colman on 194. The men's team were placed third with 240 points behind Data Logic (266) and Compower (243).

Despite this, the sweet makers have proved that, on the day, they are capable of playing competitively, even if it is only half a point, as was Martin Rigby's margin in the men's individual events.

In the team events, Rowntree Mackintosh were not so lucky, just failing to pull off a double. The scores were so close in this section that it was impossible to talk in terms of leaders until the last event, the steeplechase.

From London, National Provident has also shown that it can rise to the occasion. At last year's finals, it made the last 10 while obtaining a handy 23-point lead over Segas in the 1980 London qualifying heats.

In the Midlands last year there were five entries for the finals due to a tie at New Alexander Stadium. For the men they were Scicon, Data Sciences and Peterborough Data Processing. For the ladies, teams from Smedley-HP Foods and Data Sciences took the trip to Crystal Palace.

This year not one of those finalists even made the top five places and the Midlands will be represented by Mettoy, Midland Household Stores, Safe Computing and BL Systems.

Midland Household Stores has strength in depth: this is reflected by the fact that it was second in the men's team events, first in the ladies' team events, second in the men's individual events and first in the ladies' individual events.

The bar has been confirmed and tea and coffee will also be available along with snacks.

Tickets are available in advance and cost £1 for adults and 60p for children under 14. Advance ticket holders are guaranteed covered accommodation at the stadium.

Computastars is sponsored by Computer Weekly, Computable and Wright Air Conditioning.

Two new trophies were presented to Computastars organiser Gordon Cairns (centre) by one of the sponsors, Wright Air Conditioning. Rita Grimmett (left) hands over the UK men's team award while Pauline Deakin (standing) places the gold, silver and bronze medals around Cairns' neck. These medals are to be presented to individual winners. Elaine Harvey (right) presents the UK ladies' team award.

ALL THE TEAMS...

BELOW are names of all competitors which, at the time of going to press, are correct for the 1980 Computastars. They are listed by competitor number. The last named in each team is the team marshal. Any competitor whose name is asterisked is team captain.

Midland Household Stores (Nottingham): Paul Ellis, Steve Harriman, Howard Hewitt, Paul Webb, Glyn Hesketh* and Damon Randall.

Raet BV (Arnhem): Roel Brand, Eric Rosendaal, Peter Aalders*, Adrie Mudde, John Spierings and Willie van Omme.

Safe Computing (Leicester): Viv Oliver, Bryan Neal*, Alan de Bruyn, Donald Fifield, Stuart Murray and Jerry Meedin.

British Leyland Systems (Redditch): Joe Lewis, Dave Aleksna, Dave Richards*, Mike Bird, Martin Vile and Mike Wells.

Digital Equipment BV I (Utrecht): Johan Brouwer, Gert van der Linden, Bert Imhof, Jacques Brouwer, Ton van Woerkom* and Sjaak Imhof.

Infonet BV (Amsterdam): Theo Verbruggen, Harry Hijser, Joop Hoogstraate*, Frans Reckers, Kees van der Goor and Adri Davelaar.

Digital Equipment BV II (Utrecht): Rob Kuhfus, Ludger Kramer*, Wijnand Serdijn, Guillaume Limon, Cor Derks and Pieter van de Kaay.

F. W. Woolworth (Rochdale): Tim Tickell, Mark Saunders, Ian Schofield, Willie Crawford*, Simon Roberts and Roy Watson.

Compower (Doncaster): Jack Cooke*, Chris Yates, Neil Bowmer, Kevin Whitworth, Paul Wilkinson and Philip Reed.

National Provident Institution (Tunbridge Wells): Dave Cross*, Dave May, Bob Davies, Mike Parks, Roger Mullaley and Alan Scott.

Thorn EMI (Telford): Debra Howcroft, Carolyn Brice, Sarah Tibble, Elizabeth Meakin, Jill Walker and Barbara Ewers.

Legal & General Assurance Society (Kingswood, Surrey): Bridget Cuthill, Anne Bragg*, Val Edwards, Sue Mason, Mandy Smith and Phil Mitchell.

Crediet en Effectenbank NV (Utrecht): Wilma von Montfoort, Trudy Combe, Mary van der Linden, Thea Bliekendaal, Tineke van der Biezen*, Herman van der Haar.

Metal Box (Worcester): Jaqui Read, Eileen Adamson*, Patsy Moon, Gwen Reid, Hazel McCloy and Judy Taylor.

Midland Household Stores (Nottingham): Anne Harriman*, Judy Armstrong, Monica Camm, Jill Hesketh, Sue Buck and Joyce Randall.

Safe Computing (Leicester): Angee Dunstan, Fiona McFie*, Katherine Watson, Margaret Deering and Robert Elkin.

United Biscuits (Liverpool): Colin Spencer, Mark Coxton, Karl Mulvaney, Philip Gelling, Peter King* and William Mitchell.

Swets en Zeitlinger BV (Lisse): Piet Walraven, Stef Barendsma, Arne van der Plas, Brian Gillies, John Bul* and Perry Waller.

Computer Machinery Co (Hemel Hempstead): Grant Kleiner*, Ray Walker, George Wood, David O'Bryne, Dave Carbis and Malcolm Clement.

Rank Toshiba (Plymouth): Bob Meldrum, Bob Ferris*, Steve Jones, Tony Dommett, John King and Martin Houghton.

Data Process BV (Amersfoort): Jos Hofmans, Jacques van Hoeijen, Ronald Veldhuizen, Wim Mekkring, Herman Hoonhorst, and Wiek* Schellings.

Rowntree Mackintosh (York): Anne Shafto, Dawn Hamling, Jo Cartledge* and Louise Francis.

Control Data BV (Rijswijk): Corrie Rost van Tonningen*, Irene van der Kool-Meyst, Els van Eden-Berkeveld, Paula van Duinen, Fenneke Diepenhorst-de Hooge and Ruud Haakmeester.

ARC Automation Services BV (Amstelveen): Gerry Mollenhorst, Joke Albrecht, Ursula Kroder*, Karin Snijders, Tine Snijders and Loes Schalenkamp.

London Transport (Newman Street, W1): Pat Welford*, Jennifer Hay, Hillary Uren, Marie Kolahi Hesmat and Janet Biggs.

United Biscuits (Liverpool): Lucy Baines*, Lynne Hollyward, Kathy Michell, Alison Fisher, Pauline Day and Michael Swarbrick.

Thorn EMI (Hayes): Sue Howells, Sue Pacey, Hilary Dalziel, Jean Gardner, Liz Littlejohns* and Sandra Rowley.

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Royal Air Force programming wing (West Drayton): Neil Coyne, Chris Paddon*, Mike Addis, Chris Symonds, Andy Jennings.

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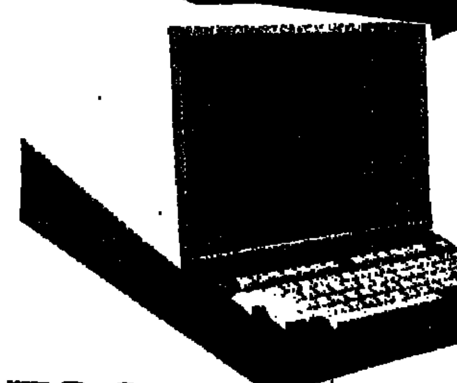

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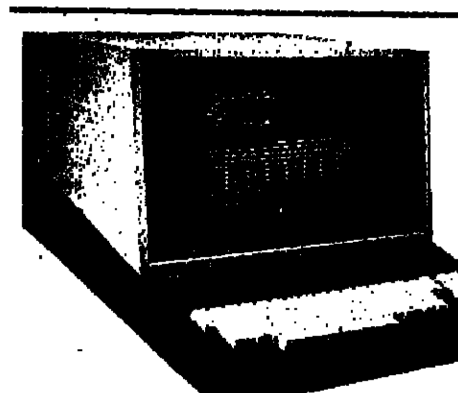

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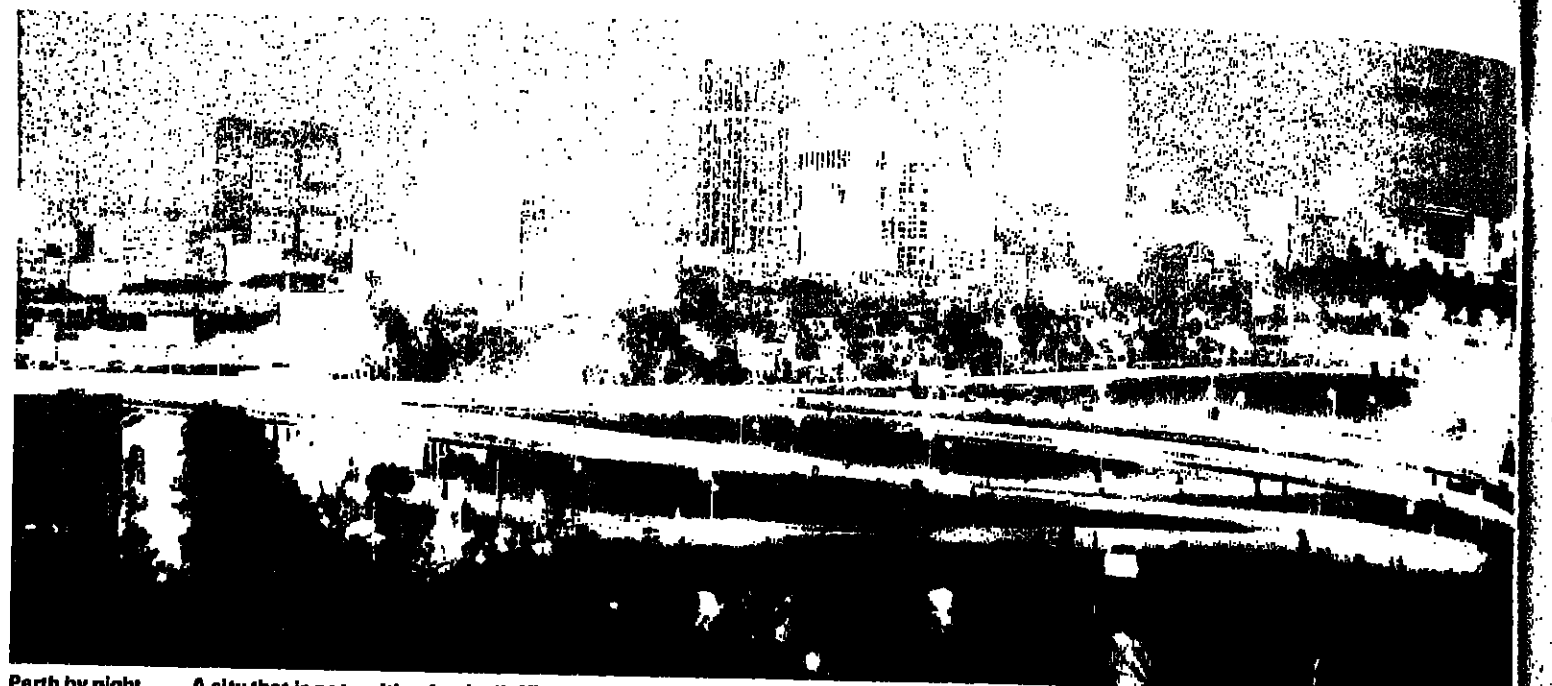
In a double look at the Australian computer scene, LAURA TATHAM reports from Perth, where a building society is using one of the most advanced information/word processing systems of its kind in the world; and EDDIE COULTER describes how an independent research bureau has been set up in Victoria to establish means of preventing computer abuse.



Perth by night . . . . A city that is not waiting for the "office of Tomorrow."

Photograph: West Australian Newspapers

How word processing doubled output 'at a stroke' Down Under

PERTH Building Society of Western Australia is not waiting for the "office of tomorrow" to materialise. For 18 months it has successfully been using an information/word processing system in which an IBM Office System 6 directly uses data generated by an IBM 370/148. The system is unique not only in Australia, where sophisticated applications are commonplace, but may well be the most advanced of its kind in the world.

Phil Carville, the Society's controller of administration services, sketched in the background history. It has long been a policy to mechanise all routine clerical tasks, he told me, and in any building society correspondence accounts for a high proportion of these.

Expanded

"In 1976, we carried out a survey in conjunction with IBM. As a result, we put in a centralised dictation system and eight IBM Magnetic Card 82 word processing machines. We trained the girls who volunteered to operate these, and got rid of 70 typewriters by selling them to the staff or putting them in branches. We kept two Selectrics, though, for work not suitable for word processing."

That move doubled productivity at a stroke, for a group of 11 girls, including a supervisor, handled work previously done by 23. Those not in word processing were retained for other work in the society.

The Perth, founded 117 years ago and now Australia's third largest building society, has expanded rapidly during the past few years. Much of this was the outcome of a boom in mineral exploitation which has brought many families to the area. Today, the suburbs of Perth, once a compact city, stretch out for up to 15 miles from the centre. The population has risen to 874,000 — three-quarters of the total in a huge State that is otherwise mostly desert.

A further factor is that Australia is a nation of home owners (though most pay off their mortgages within seven years). In Perth, the figure is 67%.

Unavoidably, correspondence, both with borrowers and investors is lengthy in content. For example, a maturity advice to a member who has made a limited-term deposit includes a personal letter with about 14 lines of body text, a deposit statement (two for joint accounts) and a foolscap-size form listing various ways in which the proceeds may be reinvested in the Society. Most days, 250 such letters go out.

A housing-loan approval letter, also personal, occupies 1½ foolscap pages in single line-spacing and consists of four parts. The borrower gets two, one of which he signs and returns; another goes to the solicitors with instructions to prepare the mortgage papers, and includes settlement and title details. The fourth, containing all the information, is filed. Each letter is made up of selections from a repértoire of 62 standard paragraphs. Variables in amounts and so on must be inserted into some of these. Altogether, this totals about 500 lines of text, and some 60 sets are prepared each day.

These documents and several other types were initiated during overnight mainframe processing during which the data was extracted from the appropriate files. Originally, it was listed. First thing in the morning, the print-outs went to the word processing operators for use as source data in conjunction with the IBM 82s.

It soon occurred to the society that if manual copying from computer print-outs could be eliminated, there would be another big jump in productivity. Would it be possible to establish a direct link between the IBM 370/148 mainframe (soon, incidentally, to be upgraded to a 4341) and the word processing equipment?

Experimentally, an IBM 6/450 information processor was installed. This consists of a workstation with typewriter keyboard and video display, magnetic card hopper/stacker that reads 240chps and records at 200 chps, and a diskette unit with media that store the equivalent of about 130 pages of text. A separate ink jet printer operates at a speed of up to 92 chps and automatically handles paper and envelopes. It is also designed to operate in various modes, including communication with a remote mainframe as well as with the 6/450 processor.

Options

Basis of the mainframe communication software is IBM's RSCS, Remote device Spooling Control System. This was originally designed to control a remote station with card reader-punch and line printer using 2770 protocol. In that form it was not suitable to meet all the requirements for linkage with Perth Building Society's System 6 word processing system.

Additional software (which the Society subsequently offered to IBM) was developed in-house. "We had to set a lot of options — for instance, block length and transmission speeds," explained analyst programmer Paul Johnson. "The ink jet printer could not work directly with the data in mainframe format so we wrote an Assembler subroutine to spool card image output on to a mainframe disc.

"We also wrote programs to merge standard letters and variables and to handle upper/lower case instructions for the ink jet printer. To work out pagination — we wanted the printer to work unattended — we set up tables to keep count of the lengths of variable paragraphs and to make the printer select plain or headed pages and collate the output."

Two basic types of data are directed to the ink jet printer. One is documents, such as reports and other texts, complete with format control. This may be printed directly or stored on cards of diskette. The other is files consisting of two or more elements for later merging with a standard letter. Such files are therefore normally directed to diskette. Mainframe transmission is initiated by the 6/450 operator, usually once only, at the beginning of the day.

Arrears

The System 6 pilot scheme went live in August, 1978. It was so successful that the Society has since acquired two 6/430 workstations and two further free-standing ink jet printers, one a dual speed model capable of 184 chps.

Today's system for preparing the maturity advices, mentioned earlier, involves the merging of client record data held on diskette with mainframe-generated financial details and variables. These are written by the mainframe on to diskettes during the night.

Data for housing loan approvals is provided at 9.30 am and 1.30 pm every day by the mainframe, which again writes to diskette. Letters can therefore be prepared the same day.

Arrears reminders number 60-90 per day. They are based on variable information produced by the mainframe during the night, merged with static data on diskette.

The system is also used to input data for processing by the mainframe, via the IBM Script software, to prepare such documents as reports, procedure manuals, and system specifications for the computer department.

All this work is handled by only two operators and a supervisor and average daily output is 50,000 lines. During peak periods, this may rise to 65,000.

A further nine girls and their supervisor work in the original word processing department. About 150 people use the centralised dictation system and there is a repertoire of some standard letters. Of these, some require long runs of up to 500 personally addressed.

Exploited

Perth Building Society has ingeniously exploited the storage and retrieval facilities of its Office System 6 to handle small, but useful, applications that could not conveniently be processed on the mainframe. Personnel records . . . plus employees . . . on diskette and can be sorted . . . two parameters at a time . . . age and length of service . . . public transport is . . . names are sorted and listed . . . postcode order, so making . . . easier to organise lifts for . . . without cars.

The mailing list . . . Housing Industrial Association . . . of which Perth's . . . manager is vice-president . . . also maintained on diskette . . . use in writing to members . . . similar file is used in connection with the various . . . munity welfare schemes . . . which the Society is involved.

Bureau to fight computer abuse

THE concern of a number of Australian commercial organisations, user associations, and academics over the increasing dangers of computer abuse has prompted the formation of an independent research bureau to identify the types of abuse and establish means of preventing it.

Run from the Caulfield Institute of Technology in Victoria, the Computer Abuse Research Bureau (CIT-CARB) has been in existence for some 18 months and has been building up a database of profiles on notified abuse in Australia and New Zealand.

Tolerance

Chaired by Kevin Fitzgerald, executive director and senior educator on accounting systems at the David Syme Business School at the Caulfield Institute, the executive committee of CIT-CARB includes representatives from the Institute, universities, the Insurance Council of Australia, the Australian Computer Society, Australian Institute of Systems Analysts, and Australian Computer Users Association.

CIT-CARB points out that because there is currently a high level of tolerance given by the business world to computer abuse, there has so far been a low level of knowledge about it. They define abuse as theft, fraud, embezzlement and damage related to computers, and include unauthorised manipulation of computer input and/or output, unauthorised access to the system through terminals, unauthorised modification or use of application programs, trespass on data processing installation, theft of equipment, files or output, sabotage of computer installation equipment, and unauthorised data interception.

CIT-CARB, as a non-profit, non-affiliated public institution sees itself in an ideal situation to serve the business community (in both public and private sectors) as a catalyst in the synthesis of knowledge in this area, as a researcher in the evaluation and development of preventative means, and as a forum for the exchange of ideas between the operators and the controllers of computerised business systems.

The bureau is currently conducting national surveys of Australian and New Zealand computer users to profile the standards of computer auditing and the level and types of computer abuse. Current figures available to the accounting, DP and business world in general are based on sample data from the US.

The national survey now under way involves 5,000 questionnaires and is aimed at discovering the facts in relation to one of the business world's most significant problems: how to ensure computer security.

Experiences both in Australia and overseas have shown that a serious problem exists. In some spectacular instances an organisation's assets have been undermined to such an extent that the very existence of the organisation has been threatened.

By guaranteeing anonymity the current CIT-CARB survey hopes that organisations will contribute to the building of both the profiles of computer abuse and the level of computer auditing in Australia and New Zealand. From this knowledge it will then be possible for an organisation to develop its own risk analysis, and direct relevant resources to the maintenance of data security.

As returns from the current national survey return to the bureau they are being entered on to a database, mirroring in format the database of Stanford Research Institute. This will enable CIT-CARB to expand the power of the findings by exchanging data with Stanford.

Skeletons

Follow-up research in the areas of particular industry studies, auditing techniques and the development of special techniques for small scale computers will also be pursued.

CIT-CARB hopes that, by revealing a few "skeletons in the cupboard" belonging perhaps to former employees who have been "fired" rather than prosecuted, organisations can contribute to the overall picture of computer abuse.

At a time when many newspapers and printing houses are switching over to computerised typesetting — and printing workers are having to learn a whole new job — ALAN AYRISS describes how one of the country's largest independent newspaper groups, the Croydon Advertiser, converted to the new technology.

All change in the newspaper industry

AS more printing houses join the bandwagon of newspapers replacing hot metal with computerised typesetting, what costs, benefits and problems can they expect?

The Croydon Advertiser, one of the country's largest independent groups with 10 publications circulating throughout Surrey, Kent and parts of Greater London, is a good example of how this important changeover can be implemented without too much disruption to business.

The group, now totally converted to photo-composition, had reached full capacity with hot metal and existing staff. After an investment of £400,000 on machinery and building alterations, productivity — without raising manpower levels — has increased significantly, enabling 185 pages a week to be printed with capacity to spare for future expansion.

Complex

But while costs and benefits can be summarised in a sentence, the associated problems are more complex. One of the biggest worries facing any printing house is maintaining production levels while this traumatic exercise takes place.

"Some newspapers have been forced either to cease publication for a short period or drastically reduce pages," explains Colin Lewis, group general manager of the Croydon Advertiser.

So the changeover was started at a time when printing schedules were low. From Day One the effect was marginal; within three months it was hardly noticeable; and after six months productivity was higher than it had been with hot metal.

For nearly eight months, newspapers were produced with both hot metal and photo-composition, as the new equipment was gradually installed. The system includes Data General Nova 3 computers and two Compugraphic Videosetter V photosetters, each with a potential output of 720,000 characters an hour in 76 type sizes and 86 styles. They are fed by 15 Whittaker/Datek keyboards producing six-level punched tape.

Prior to photo-setting, the tapes go through a high-speed printer to provide printouts for proof-reading. Corrections are made by four CRT 7000 editing VDUs.

The remaining production stages involve compositors pasting up the various bromides of text, illustration and advertising to form complete pages. These are photographed, and page-negatives are exposed to light-sensitive polymer material which solidifies into a printing plate.

Unions and management consulted and co-operated fully during the changeover. The group employs about 200 people on production and for them photo-composition has meant a completely different working life with new materials, new methods, new skills and new conditions.

Full retraining was given in every area. And both Lewis and Brian Ridge, Imperial Father of the Chapel of the NGA at Croydon, agree that the retraining of keyboard operators was not only the most important requirement but it could have been the biggest of all the problems associated with changeover.

New job

"If operators had not reached the required standard, the consequences could have been disastrous," comments Lewis. "Production might have been hit to the point when the whole investment programme could have been jeopardised."

"The biggest fundamental change in our lives was the keyboard," adds Ridge. "In other areas, training can be fairly informal. But moving from Linotype to Qwerty machines is like learning a new job."

Both Lewis and Ridge say that the problem never surfaced because of the standard achieved by Keyboard Training Ltd, the company chosen to give in-house instruction.

One of KTL's instructors Charles Froggatt, worked full-time at the Croydon Advertiser, on normal shifts as required, until 24 keyboard operators had been trained to the standard required to maintain production levels.

Watched by Brian Ridge (centre), Father of the Chapel for the NGA at Croydon Advertiser, keyboard training instructor Charles Froggatt gives advice to operator Lionel Wilson.

As well as training keyboard operators at the Croydon Advertiser, Charles Froggatt (right) also advised in other areas of photo-composition.

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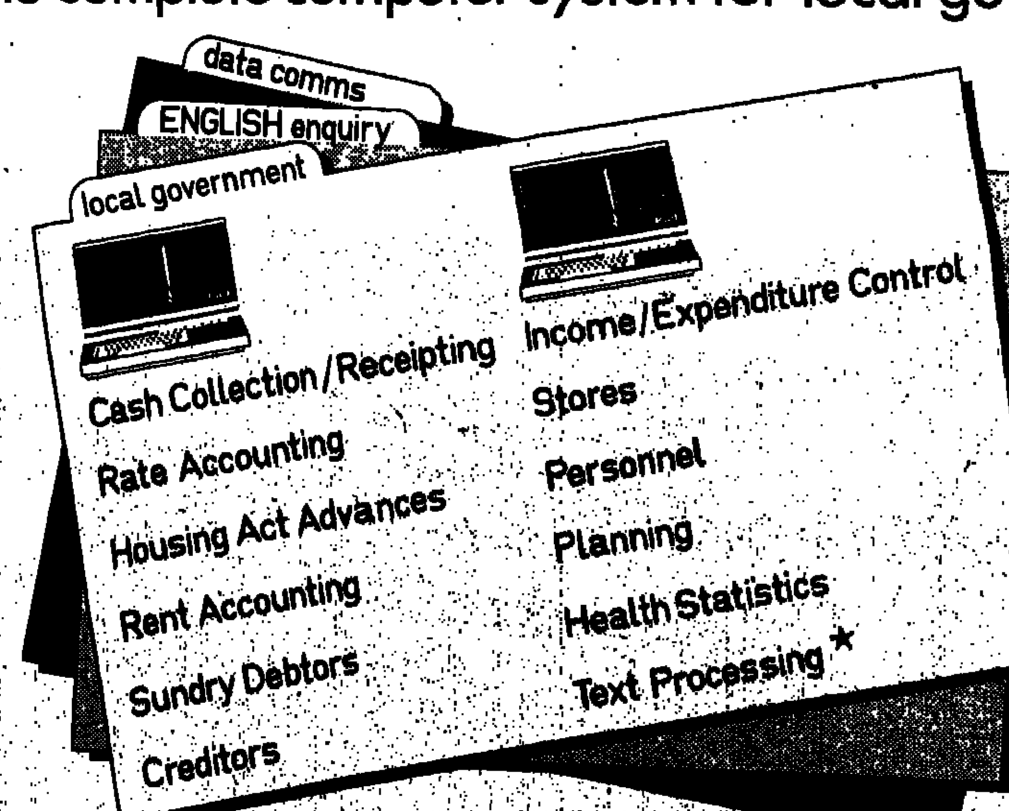

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Any old junk? then call Sir

Do you have any old computer junk that you want to get rid of? If so, Les Parren of Eastwood High School for Boys, near Southend would like to hear from you. He has collected an array of written-off hardware for use by his pupils so that they may be admitted to the mysteries of programming.

NICK ENTICKNAP investigates and points to the enthusiastic response from pupils which extends to boys staying after school.

COMPUTER equipment that is of no further use to commercial organisations can still have a valuable role. So says Les Parren, head of the mathematics department as Eastwood High School for Boys, near Southend. Over the past seven years, Parren has built upa sizeable computer inventory for the school.

Pride of place goes to an ICL 1901A with twin discs, line printer and paper tape reader. The school also has two NCR 500s and an NCR 400, with a range of supporting equipment: Honeywell keytape encoders, ICT and Kode paper tape punches and verifiers, NCR 446 programmable data capture stations, Cummins optical documents systems and an ICT card sorter.

Parren acquired all this equipment after introducing computing into the school's curriculum. He got it by approaching various local organisations, such as the Southend Civic Centre, the Southend Evening Echo and the Eastern National Bus Company, and some not so local, such as the Stock Exchange, Tottenham Technical College and Gaunson's of London (a men's and youth's clothier).

Free

All these organisations gave the school obsolete equipment free of charge. Parren maintains the kit himself; over the years he has built up a stock of spare parts sufficient to cope with most eventualities, although he says, "If there's a major logic failure, then it's just junk." The equipment is installed in two classrooms; there is no special flooring or air-conditiong.

Parren says that older equipment is better for teaching purposes. The NCR 500, for instance, "is marvellous for teaching; take off the front and you can actually see the core store.

"Also, you can see the commands being executed and the addresses being used from the panel lights on the front. With a micro, you can see absolutely nothing."

The school also has a teletype link to an ICL 4130 and an Eclipse S/200 run by the Chelmer Institute of Higher Education.

Grant

These facilities are necessary because the school enters its students for CSE and GCE examinations, and so has to guarantee the availability of suitable computing resources at all times.

In fact the school's own computers have never broken down, but there is always a possibility that a major failure will occur.

The school also bought a Research Machines 380Z micro with a grant from the local authority. Its educational twin, the Eastwood High School for Girls just across the road, has also acquired a micro — a Commodore Pet.

As a result, students at the Eastwood Schools get experience of a much wider range of computing facilities than most of their contemporaries — from old-fashioned mainframes to modern minis and micros.

Computing education starts in the fourth year, when the students are about 14. At this stage they study for the CSE exam in computing, which requires a knowledge of computing science (accounting for about 70% of the marks) and the ability to write programs (30%).

The computing science course covers basic technology and terminology, coding systems, binary and octal arithmetic, flowcharts, the economics of computing, the social implications of computing, and computing history.

Projects

The programming part requires the completion of seven projects, ranging from simple programs, such as one to calculate the volume and surface area of a box, to more complex programs involving file handling routines.

Most of them are written in C & G 319 assembler, but at least two have to be written in a high level language, either Fortran or Basic.

The students start off writing programs on mark-sensed cards. From there they progress to programming sheets and punched cards, and then on to paper tape. All these programs are run on a batch basis.

Finally, they move on to online data entry via the teletypes. By the end of the course, they have had experience of all the school's equipment.

The programs are run at the Chelmer Institute of Higher Education in Chelmsford, part of which is the Advisory Unit for Computer Education in Essex, responsible for all computing in schools in Essex.

As well as providing a computing facility for the school, it maintains the two teletypes, supplies paper tape and cards and provides advice, all free of charge.

In the sixth form, there are two options open to the students. Those who have taken and passed the CSE course go on to A level, while those who did not study computing in the junior school are entered for O level.

Enthusiastic

The A level examination requires the completion of a substantial project or suite of programs, accounting for 20% of the marks, and a knowledge of computer science at a more theoretical level than is required by the CSE exam. The O level exam sets a standard half way between the two.

Response at the school has been very enthusiastic. Over 100 pupils are taking computing at one level or another. It is commonplace for the boys to stay on after school until the building is locked up, and many of them also make their way to the Chelmer Institute to pursue their studies there, a journey involving two long and tedious bus rides. This enthusiasm is reflected in the examination results; so far the school has not had a single failure.

Micro is used to help beat terrorists

A GROUP of former US ... ment agents have set up ... called Risks International ... bid to warn potential ... terrorism.

Based at Alexandria, ... the firm uses a Radio ... TRS-80 microcomputer ... pile and arrange data ... 9,000 terrorist incidents ... have occurred since 1970.

The firm charges each ... $960 a year for information needed to assess the ... doing business in ... places. Multinational ... tions make up 96 of the ... clients.

Risk International ... that of the 615 known ... operations between January ... March 1980, 208 (34%) ... directed against domestic ... foreign businesses. During the same three month period, ... the 21 kidnappings (52.4%), ... of the 217 bombings (47%) ... the 200 attacks on facilities (32.5%), 21 of the 163 ... tions (12.9%) and all of the ... hi-jackings were aimed at ... ness targets.

Retired colonel

Roy Tucker, Risks International's president, is a former ... Air Force colonel who worked in counter intelligence; ... Burns was with the FBI, ... Air Force and the US ... services administration ... company secretary ... Russell was an academic ... lectured the USAF on ...

In 1978, Tucker, Russell ... Burns retired from their ... jobs to set up Risks International. Since then, it has ... four other full-time ... (including a computer professional) and a large ... consultants.

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Canadians take largest stand at Compec

THIS year sees a strong contingent of Canadian firms at Compec — they have combined to take over the largest stand at exhibition, which will be held at Olympia from November 4 to 6.

The four-island site covers 2,785 square feet and is to feature Canada's latest developments in DP. These will include systems for commerce, banking and insurance from Geap; APL time sharing and consultancy from I.P. Sharp and Associates; processors for X25 networks from Memotec; and video terminals, including APL variants, from Volker-Craig.

Despite having Uncle Sam for a neighbour on both frontiers Canada has maintained a ... of independence in ... philosophy. She has been in... volved with DP since 1952 ... Toronto University ... second organisation in the world to buy a computer.

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Brazil wakes up to informatics

by John Williams

BRAZIL is the fifth largest country in the world (about the size of Western Europe) and, with a population at about 110 million, the eighth most inhabited.

The country's "economic miracle", which saw industrial activity growing at an annual rate of over 10% a year for 10 years from 1964, resulted in the accumulation of foreign debts currently estimated at over $30,000 million.

As in most other energy importing countries, the spiralling world price of oil aggravated this and has fuelled domestic inflation. This year, the rate had passed the 70% mark. Increasingly, the government has come to view a positive balance of trade as a key element in its economic strategy.

In this way it hopes to continue to service its external debts and maintain a good credit rating with the world's investors.

Computing in Brazil must be viewed against this rather dramatic backdrop. Straight imports of hardware are becoming rare. Where no indigenous supplier can be found to meet a particular requirement, the favoured course is the establishment of joint ventures with majority Brazilian shareholding, and local manufacture. This stratagem also increases the potential of the country's own export trade in high technology.

Golden era

The first computer was installed in Brazil in 1959, but not until the "economic miracle" got under way was there a really strong demand. This was spearheaded by the banking sector. From 1969 to 1975, imports of computer equipment and spares escalated from US $25 million to US $212 million. This was the golden era for foreign manufacturers.

However, the market had looked so promising that the world's leading manufacturers became involved in rather extravagant price war. Successive generations of hardware flooded in before their predecessors had realised anything like their full potential, and after-sales service declined.

The wastefulness of this did not escape the government, which in 1975 imposed severe restrictions on imports. Control was exercised by a commission known as CAPRE (Comissão de Coordenacão das Actividades de Processamento Electronico).

The following year, imports slumped to US $82 million, and had recovered only to US $111 million in 1978. Simultaneously with the clampdown on imports, the organisation called Digibrás (Empresa Digital Brasileira) was established with the aim of encouraging domestic manufacture.

A co-ordinating holding company between government, private industry and university institutions, it was allowed to participate in the shareholding capital of new industrial ventures.

The joint efforts of CAPRE and Digibrás have resulted in the foundation of 30 such companies, manufacturing minicomputers, terminals, modems, keyboards, printers, VDUs, etc. In addition, some 25 foreign manufacturers have establishments in Sao Paulo or Rio de Janeiro.

Monopoly

The advent of minicomputers led to a strengthening of the powers of CAPRE and Digibrás. Initially, foreign companies were reluctant to participate in setting up local mini manufacture.

However, in 1974, the Cobra subsidiary of Digibrás was established in association with EE Equipamentos Electronicos and Ferranti to manufacture the latter's Argus 700 series.

Two years later Cobra was close to being granted a monopoly in the field with the Argus 700 and the locally designed G-10. Criticism from the Brazilian business community resulted in CAPRE formulating the conditions by which companies with a Brazilian majority shareholding could enter the market.

In addition to Cobra there are now three mini manufacturers: EDISA (EDISA Electrônica Digital), LABO Electronica Ltda and SID (Sistemas de Informatica Distribuidora SA).

These manufacture respectively the ED 301 and 302 (Facom VOS111 and VO111), the LABO 8870/1 and 8870/2 (Nixdorf 8870/1 and 8870/2), and the SID 5200 (LX 5,200, DA Logabax).

LABO Electronica has export plans involving Mexico, Chile, Venezuela and Africa, which are expected to be worth 16 million cruzeiros (£135,000) by 1984. SID is hoping to export 25% of production to Latin America, Africa and the Middle East by 1985.

The Brazilian telecommunication authority, EMBRATEL, announced its plans for a public data service at the end of 1979. Initially covering 30 main cities, the service is available 24 hours a day.

Over 5,000 terminals have been installed, with a target of 48,000 by the end of 1985. The total investment cost is of the order of US $200 million.

Control

In October 1979 the Brazilian National Security Council (CSN) effectively took control of the nation's computer industry with the creation of the SEI (Secretaria Especial de Informatica).

SEI, which supersedes CAPRE, will formulate national policy on data processing to encourage the further development of Brazilian technology. Among SEI's priorities is the improvement of Brazil's software services.

Independent software companies in Brazil have traditionally faced three obstacles. Manufacturers have tended to sell software along with hardware, meeting the basic requirements of the users.

For computing services applied overseas (mainly the US), vast libraries are available containing both basic and support software.

These are sold by the companies which develop them, or by their representatives. The achievement of finished software products requires a level of technical capability which has only recently been achieved in Brazil.

In an attempt to redress this imbalance, SEI will give incentives to local companies. However, for the medium term, it seems likely that the import of software will continue.

Since the economic miracle of the late 1960s and early 1970s, Brazil has been able to modernise her industry. However, the country has been cursed by inflation to the rate of 70% — which makes the UK's 16.9% look quite good.

Straight imports of hardware are now rare with State encouragement to buy locally where possible. Despite these problems and the political instability which seems to be a part of Latin American life, Brazil has well and truly woken up to the age of informatics.

Growing

SEI, made up of representatives from government, armed forces and private computer companies, will probably also concern itself with the assuring of adequate supplies of spare parts and components, and modules for the expansion of installed systems. The approval for the importation of new systems seems likely to be granted only in exceptional circumstances.

In July 1979 Brazil's total installed computer population numbered 7,488, an increase of 14% over the previous year. The fastest growing sector was mainframes costing between $600,000 and $1.2 million.

The next largest was minicomputers, costing up to $30,000. Market leaders with market share are as follows: Olivetti (34%), Burroughs (25%), IBM (16%), Hewlett-Packard (4%), and NCR and Philips (slightly less than 4%).

Local manufacture accounts for 2.8%. Digibrás estimates that by the close of 1982, 14,200 computers will be installed in Brazil, of which 78% will be minicomputers.

Informatics, in its broadest sense, is beginning to attract the attention of the Brazilian authorities. This can take the traditional form of erecting barriers against the importation of hardware.

As is now well known, British Telecom is installing a trial Prestel system for evaluation by the authorities in Sao Paulo; if successful, the result could be the most valuable UK videotex export to date.

Recent reports have it that the trial was being held up by difficulties over the import of the GEC 4065 database. A spokesman for GEC Computers has denied that there are currently any problems, but confirms that talks about the future licensed production of the 4605 are taking place.

Certainly it seems that the Brazilians will be primarily interested in software and training, and that only small quantities of hardware will be imported.

No privacy

According to the May issue of the leading Brazilian telecommunications journal, 'Revista Nacional de Telecomunicacões', the Portuguese word for "privacy" (privacidade) is not yet included in Brazilian dictionaries. If the Brazilian authorities are not much concerned with this aspect of transnational data flows, they are certainly alive to the economic implications.

Processed data has a price and an effect on balance of payments like any other commodity.

At the World Conference on Trans-border Data Flow Policies in Rome, the Brazilian delegation dropped broad hints that it was considering the imposition of a levy on imported data.

This has been mooted by other nations — notably France — but the problem has always been the monitoring and identification of data.

Brazil, it seems, may use international telecommunications gateways as "data customs posts".

Progress on high level protocol standards

AS a result of considerable activity in ISO and CCITT, most suppliers of software and hardware and many users are aware of the need for standards at all levels to take advantage of the public and private data communications systems now in prospect.

In general, the users are forced (and happy) to leave the standardisation problem to the experts, but cannot understand why progress is so slow.

The slow progress is largely due to the fact that, to be effective, the standards need to be created from the top down; that is, international agreements which are then adopted within each country. This procedure is liked by the suppliers who are not then faced with a multiplicity of national standards.

Unofficial

It is also the way in which British Standards Institution likes to work — "Do it once, do it right, do it internationally."

France, West Germany and the US have decided that they cannot wait and are introducing unofficial national recommendations on high level protocols — levels 4, 5 and 6 in the ISO 7-level reference model — and the same may happen in Japan.

The UK is in a curious position in that while the BSI is not able to generate short-term standards, there is in the case of Transport Service (the "Yellow Book") and File Transfer (the "Blue Book"), proposals which have been developed over many years of committee work and implementation experience. They both form inputs to the national and international discussions, and have done so for a long time.

The demand for a Character Terminal standard is such that the DoI's Data Communication Protocols Unit has now formed a working party on Terminal Handling Protocol.

Embarrassing

"The DCPU is in an embarrassing position as it is not competing with BSI but merely providing back-up for its work," says Keith Bartlett, head of the Data Communications Protocol Unit. "However, users recognise that proposals produced through the DCPU, while not carrying the authority of BSI, can be picked up and used by those in need and this is what may well happen with the new Terminal Handling proposal as it did with the Yellow, Blue and Red documents on Transport, File and Job Transfer."

Chairman of the new working party is Dr Richard Winsborrow of AERE Harwell (Abingdon 24141, ext 2778) and he would be pleased to hear from anybody who can contribute to the work, the basic premise of which is to examine existing proposals rather than generating new ones.

— DONALD KENNETT

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BOOKS

Penetrating the mystique of financial planning

Financial planning for managers, by A. H. Taylor and R. E. Palmer. 253pp. £1.75 plus 20p post and packaging. Pan Books (CW), Cavaye Place, London, SW10 9PG.

ACCOUNTING is shrouded in mystique. It is a subject most of us hate, though we would probably like to earn the fabled fees accountants are supposed to get.

One section of this "black art" which is having a greater impact on business month by month is that of financial planning. Traditionally, this was only done up on high by the chief accountant and senior managers.

But with money costing 19% to borrow on a concessionary rate, it is becoming more important for all managers not only to be able to understand accounts but also to be able to draw up forward plans.

Hence the need for a book which tells the average boss how to do this.

Targets

The book covers profit targets, forward planning, sales forecasting, production budgets, business capacity, price control, capital budgeting, information needs and cost control.

While it does not specifically dwell on the problems that face DP management, it does provide an objective and practical approach to each subject covered with worked examples.

For just under £2, many questions facing managers and would-be managers can be answered.

CHRIS YOUETT

Health and safety at work

Health and safety — the law, by James Jackson 236pp £16 Industrial Relations Briefing (CW), 346 Harrow Road, London, W9. Tel 01-289 1159.

THIS edition has been updated to take account of the Health and Safety at Work Act which, among other things, created the Health and Safety Executive.

There is a general rule at Common Law that an employer has a duty to provide a safe place of work and, with the right of trade unions to appoint in-house safety representatives, no employer can afford to be ignorant of current legislation.

This book spells out in simple terms the current state of play.

Micro revolution coming—but when?

The Micro Revolution, by Peter Large. 222 pages. £1.50. Fontana Books (CW), 14 St James's Place, London, SW1A 1PS. Tel: 01-493 7070.

The Micro Revolution, by Peter Laurie. 287 pages. £1.50. Futura Publications Ltd (CW), 110 Warner Road, London, SE5 9HQ. Tel: 01-737 2431.

IT HAS taken the general publishing world some time to catch up with the micro chip. Now, as if to make amends, two identically titled and priced paperbacks have been realeased.

Similarities do not stop at this point. Both books are written by computer journalists and both forecast that the "micro revolution" will change all our lives.

Peter Large is technology correspondent of The Guardian and his book is written with much journalistic flair. It is highly topical with references which jog one's memory back seemingly to a month or so ago. Only the cost is a jolt, but this probably is part of the UK price revolution.

First class

Large certainly has a first class information retrieval system. There are industry quotes, facts and figures to back every point and argument presented in the book.

So profuse are the quotes, that the author's own views tend to get submerged in a welter of comments from such figures and organisations as Isaac Asimov, Tony Benn, MP, David Firnberg, George Penney: The BCS, NCC, Univac and the British Friesian Cattle Society.

Computer Weekly naturally does not escape attention having forecast in a Delphic Poll that, by 1985, comprehensive information on all citizens will be held in a central, national databank and that by 1999, the average working week will have been cut to 20 hours. Except possibly for the national database installation team and vendors of add-on storage memory systems.

While the Peter Large micro revolution is heavily involved in the impact of the chip on the social, economic and futurology sciences, Peter Laurie's version resembles more a basic primer on micro chip technology.

Despite the heavy technical content — the author is editor of Practical Computing — the book is written in a pleasant relaxed style and certainly makes Algol, Fortran, Basic and ROMs seem entertaining.

The subtitle to the book is "A change for the better or worse?" Readers may well remain uncertain after completing the book. But at least they will be better informed.

On the brink

To a large extent, promotion of chip technology has been super-hype with the world, as a result, seemingly trembling on the brink of a micro takeover.

But for all prophets of micro doom and gloom, the books should be compulsory reading.

The micro may well be a threat but, as the Large book suggests, opportunities could outweigh the dangers and risks.

Unfortunately neither author includes DP personnel in the opportunity stakes. According to Large, first to go will be the operator as increasingly users take over the control button. Next for the micro-chop will be the managers followed by programmers. Systems analysts apart, prospects for DP men seem bleak.

No firm date however has been set for the arrival of the micro revolution and, given the current sales trends of mainframe systems, maybe we don't have to worry — at least this year.

ALAN SIMPSON

Designing systems to help workers and boost productivity

Computer systems in work design — the Ethics method, by Enid Mumford and Mary Weir. 314pp. £12.50. Associated Business Press (CW), 107 Fleet Street, EC4A 2AB.

THE best attribute of this book is the detailed case studies: three realistic system design problems are given for use in the classroom along with sample answers for each of the design stages.

The Ethics method stands for "Effective Technical and Human Implementation of Computer Systems" and the book could be of use to trade unionists interested in computerisation, management interested in productivity and worker satisfaction and DP training departments.

Impressed

The most important feature of this book is that it gives the reader the opportunity to focus on a critical problem area: how in practice to design systems which are better for the workforce and which arguably lead to higher productivity and lower staff turnover.

I was particularly impressed by the systematic approach to systems analysis and new systems design approaches such as determining multiple goals and constraints in a form manner, exploring alternatives systematically.

The book has chapters on the Ethics method, job satisfaction, using the Ethics method for diagnosing needs and designing work system, and three chapters on case studies.

It is rounded off with conclusions on the practical applications of the Ethics method, some notes for teaching the material under a variety of classroom situations and some definitions of computer terms. It also has references and an index.

On a critical note, I would have liked to see the goals set in more measurable terms so that the design alternative could be judged in a less intuitive manner.

But this level of design might perhaps initially be less formal since most of the participants users of the method are not professional systems designers.

The examples illustrate only high level strategic design and there is nothing indicating that a more formal method such as design by objectives cannot be used to work out exact details once participative design has chosen the most acceptable strategy.

TOM GILB

COMPUTER WEEKLY is holding its Annual Ball on Friday October 10 at the Royal Lancaster Hotel, London

Cabaret

RAY ALLEN and LORD CHARLES

Computer Weekly is holding its fifth annual Ball. Last year nearly 700 people attended what has come to be regarded as the computer industry's big night out.

This year the Ball will again be held under the patronage of the British Computer Society. And proceeds will once more be devoted to a deserving cause associated with the computer industry.

So why not help us to help others? And at the same time enjoy a pleasant evening with friends and colleagues.

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Firm hopes to market new printer technology

KCR Technology Inc, a young company in East Hartford, Connecticut, hopes soon to market a non-impact data processing printer system which it claims is more versatile than either impact or other non-impact data processing printers. It uses a brand new printing technology.

But KCR president Richard J. Coburn, says the company needs additional financing before it will be ready to market the product.

The KCR 1000 uses a cathode ray tube which has a series of very fine conductors protruding from its surface. A dielectric belt makes contact with these conductors, which deposit electrical charges on the belt that correspond with the image to be printed. The activated area of the belt then travels through a tank containing charged ink particles in a liquid medium. These bits of ink are attracted to the charged areas of the belt, forming visible characters. The ink is then transferred to the paper, which is, in turn, cut and stacked.

The system can print up to one page per second and is designed for use with a 19.2 kilobaud communications link. It has, in addition to its printer assembly, an operator's terminal and a tape transport system.

KCR uses a Digital Equipment PDP-11 minicomputer to control the tape transport, which accepts magnetic tapes generated by the user's main computer and prepares the data in the desired format. The KCR 1000 feeds paper from a roll, prints the data on the paper, cuts the paper to length and then stacks it.

KCR was founded in 1977 and went public in August 1979. It now has 10 full-time employees and 10 part-timers.

Coburn says that the system fills a gap between very fast and expensive printers, like the IBM 3800 laser printer, and slower and less expensive impact printers such as the IBM 1403 and its successors. The KCR 1000 is smaller and cheaper than the 3800, and faster than the impact printers.

"The problem with the 3800 is that it's so fast, and gobbles up so much data, that there's no way to operate it remotely unless you have great communications capability, better than what AT&T can offer. You need special data links; you won't with our system."

"The KCR 1000 is a lot smaller, a lot more versatile," he adds, "but still fast enough for most needs."

NEWS IN BRIEF

Conference on PO changes

A TWO-DAY conference on the effects of the government's proposed changes to the 1969 Post Office Act is to be held on September 29 and 30 at the Cumberland Hotel, London by the Chorleywood-based subsidiary of the US consultancy the Yankee Group.

Called British Telecommunications — Transistion and the User, the conference is to be followed up by a quarterly report starting in October called European Technology Update.

MCM deal in UK

AN agreement has been reached between MCM Computers of Canada and British Leyland Systems for the UK distributorship of all MCM's APL-based systems. BLSL plans to establish a dealer network to sell to non-BL customers throughout the UK, and to develop the machine for hybrid mainframe/micro time sharing systems and standalone applications.

$22m printer deal

DATAPRODUCTS has won a $22 million OEM contract to supply line, band and drum printers to Southern Systems of Ford Lauderdale, Florida. The Florida firm will incorporate the Dataproducts units in its printer subsystems for end users.

Comments please

THE US Federal Communications Commission has invited public comment on its proposal to require American Telephone and Telegraph to analyse its costs in three main groups of long distance services — dialled calls, flat rate arrangements and leased lines — so as to be able to prevent it from subsidising cut-rate competitive services from overpriced monopoly services.

Instant sales

INSTANT counter sales and 48-hour mail order deliveries of peripherals are available from Visual Mar-Com Systems of Croydon. Products stocked include 8 and 5¼ inch floppy discs, data cassettes and daisy wheels for use in Qume and Diablo printers.

Main dealer

THE Byte Shop Computerland has been appointed main dealer for the SGS-ATES Nanocomputer. Based on the Z80, the system was developed for educational and training use.

Plato brochure

A BROCHURE describing Control Data's Plato computer-based education system and how it will be made available in the UK can be obtained from Control Data Ltd (CW), 179/199 Shaftesbury Avenue, London, WC2H 8AR. Tel: 01-240 3400.

Catalogue

FROM Data Display Products comes a 20-page catalogue describing its range of LEDs, their uses and the terms used to describe them. The catalogue also gives details of the firm's network of domestic and international salesmen and distributors.

Data Display Products (CW), 303 North Oak Street, Inglewood, California, 90302, USA. Tel: (0101-213) 674 5940.

Decision soon on bank's DP service

LEGAL battles are coming to a head between Citibank of New York and ADAPSO, the US computing services association, over the bank's efforts to enter the data processing business.

A judgment is due in mid-September from the US District Court in New York, while hearings are also to be held by the Federal Reserve Board and the Controller of the Currency.

'Unfair'

ADAPSO has been complaining that banks are competing unfairly against its members by cross-subsidising DP services from banking operations, and bundling banking and DP services together. A settlement was reached with Citibank two years ago (CW, September 21, 1978) by which the banking and DP businesses would be operated under "maximum separation" and with different names.

Then Citibank decided its time sharing service would be called "Citishare", which ADAPSO regarded as in effect using the bank's name and giving the service that identification in the eyes of the public.

Citibank was "playing a game", in the words of ADAPSO vice-president Jerry Dreyer, and as a consequence the group broke off negotiations and reactivated its law suit.

The Federal Reserve Board (which controls holding banks) and the Controller of the Currency (who regulates commercial banks) are both due to hold hearings on whether the bank is breaching the Bank Acts.

Citibank insists that its computing activities are all part of its banking business. It is selling financial applications software to customers, and supplies other smaller banks with a turnkey mini-based system to handle all their normal business, called Cititran.

As a systems house it provides everything but the hardware, including support; training and networking software.

Other smaller businesses have been acquired by the bank, and where they have strayed far from the banking field, have been sold off.

Fujitsu's JEF success in China

FUJITSU'S Japanese language Extended Feature, JEF, has scored its first sales success in China. JEF is a software package which enables Fujitsu's computers to be programmed in Chinese characters, and is equally applicable in countries like Korea, Taiwan, Hong Kong and the People's Republic of China as it is in Japan itself.

The order, for an M-140F, approximately equivalent to an IBM 4331 Model Group Two, comes from the China Ocean Shipping Co of Peking.

The order was landed by a consortium of Japanese companies which also included Mitsubishi, the Mitsubishi joint venture company MOM, and leading Japanese shipper Nippon Yusen Kaisha. The computer system is to be used by China Ocean Shipping for administrative applications including personnel management and payroll, and freight management.

French report calls for more government control of information

THE milestone report produced for the French government by Simon Nora and Alain Minc, The Computerisation of Society* is now available in an English translation.

The report was commissioned by President Giscard d'Estaing personally, and the lack of interest shown by other Western governments in considering information policy in general means that the Nora report provides an interesting perspective on these problems.

Big changes

Nora and Minc's central thesis is that an enormous change will be wreaked on the structure of society by the huge volumes of information made available by convergence of computing and communications technology. Shifts in power structures and major cultural conflicts are envisaged, and existing political systems may cease to work.

There will be particular conflicts between social classes that have different abilities to access information, the authors say.

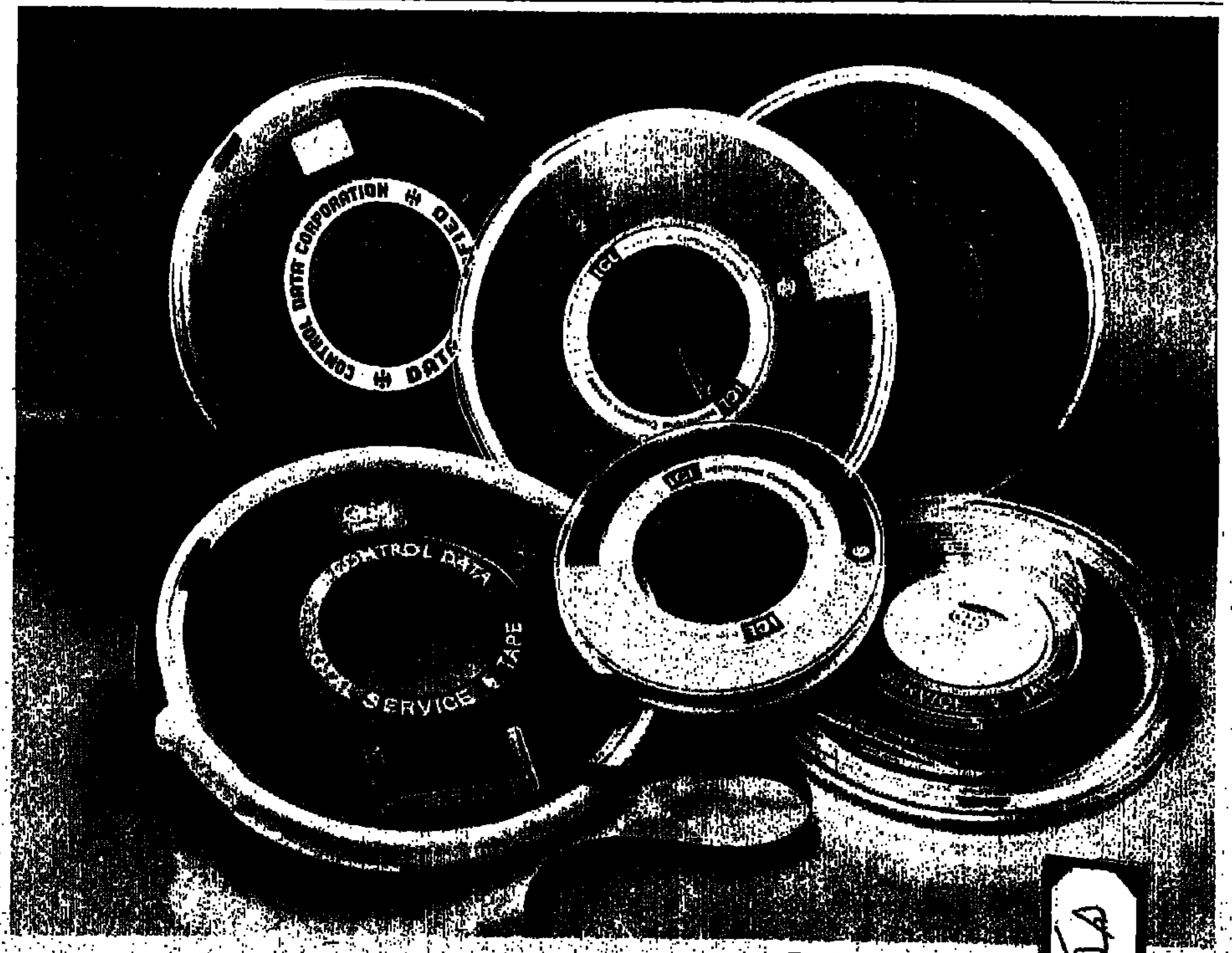
The main recommendation that leads from this is that information needs to be "socialised", that is, controlled and managed by the government even more than it is now.

A sizeable part of the report is concerned with international power conflicts, especially the domination of the data processing business by US companies, and the information supply business by US databanks. Continued government action is urged in these areas.

Two courses of action needed to be taken to implement the recommendations, Nora said when the report was published two years ago.

One was the rapid establishment of permanent agencies to apply the new policies, and the other, the setting up of study groups to investigate further.

*The Computerisation of Society, by Simon Nora and Alain Minc, Massachusetts Institute of Technology Press, £7.75.



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PRODUCT NEWS

Emulator package for online jobs

FROM Datapoint comes an emulator software package that permits an operator to perform online and distributed processing functions on the same terminal.

The package allows Datapoint 3670 Datastations to function as IBM 3277 Model 2 display stations and Datapoint 3601 datastations. It is called EM 3270.

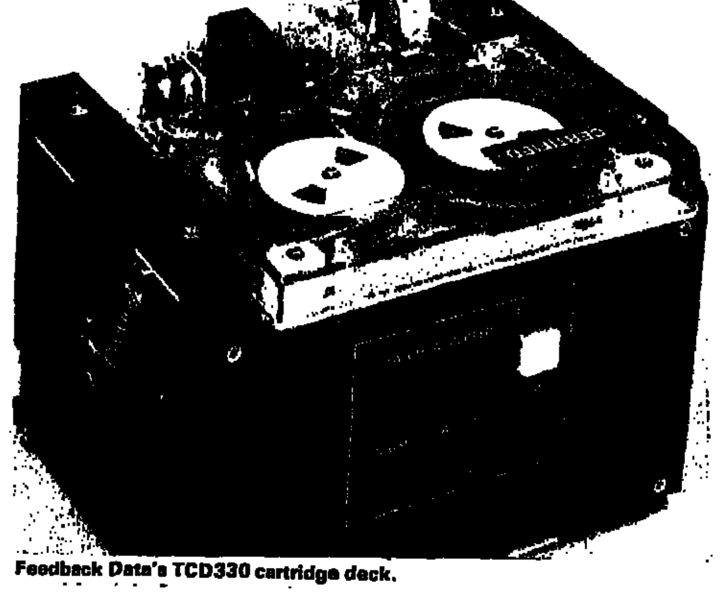
The emulator is an object program that is loaded down line into the 3670 Datastation by a Datapoint 1571 distributed processor.

The Datapoint processor acts as a 3271 Model control unit and forms the interface between the mainframe and up to 16 3670s acting as 3277 display stations. Datapoint says the 3670s are also connected to its time sharing system and this means that both online and distributed processing can be executed.

The emulator supports communications line speeds up to 9,600 baud and the Datastation is available in either 115 or 230 volts (50 to 60 Hz) models.

Datapoint says that in a typical configuration, up to 16 3670s can be connected to the mainframe via a Datapoint 1571 distributed processor acting as a cluster controller. Datapoint 9470 (four port) and 9471 (eight port) EIA hubs form the interface between the controller and the 3670s.

Ventek Ltd (CW), Station House, Harrow Road, Wembley, HA9 6ER. Tel: 01-903 6261.


Feedback Data's TCD330 cartridge deck.

Hardware development module

A HARDWARE development module for the 16-bit Z8000 microprocessor is now being supplied by SGS-ATES. Called the Z8000 DM, it complements the Z8000 SDP software development package.

It has 16K-words of RAM, expandable to 32K also 2K-words of EPROM, expandable to 8K.

The clock rate can be set to 2.5 MHz or 4 MHz by changing board links. For input/output there are 32 parallel lines and two RS 232C serial I/O ports. A wirewrap area is provided on the board. It costs £1,125 + VAT.

SGS-ATES (CW), Walton Street, Aylesbury, Buckinghamshire. Tel: 0296 5977.

Pack for linking two remote PDP-11 systems

A SOFTWARE pack that will establish a communications link between two remote Digital Equipment PDP-11 computers has been launched by Xoren Computing.

Called IPL-11, the pack enables any types of files to be transferred over a telephone line or other communications channel and incorporates CRC error checking according to CCITT recommendation V41, says Xoren.

Data transmission is asynchronous via DEC standard terminal interface cards such as DL11, DZ11 and DM11. Each computer appears to the other as a remote terminal.

Xoren says that for installations with more than one terminal, the only additional hardware normally required at each computer is a modem or acoustic coupler which can be connected to a terminal interface card in place of one of the terminals. Transmission speeds of up to 9,600 baud can be selected by the operator.

The package occupies about 6 kilowords of memory and runs under a number of DEC operating systems. The licence fee for the basic version of the IPL-11 package running under RSX-11M is £480 per computer.

A demonstration is available on Xoren's in-house PDP-11 machine in London at the address below.

Xoren Computing Ltd (CW), 28 Maddox Street, London, W1R 9PF. Tel: 01-629 5932.

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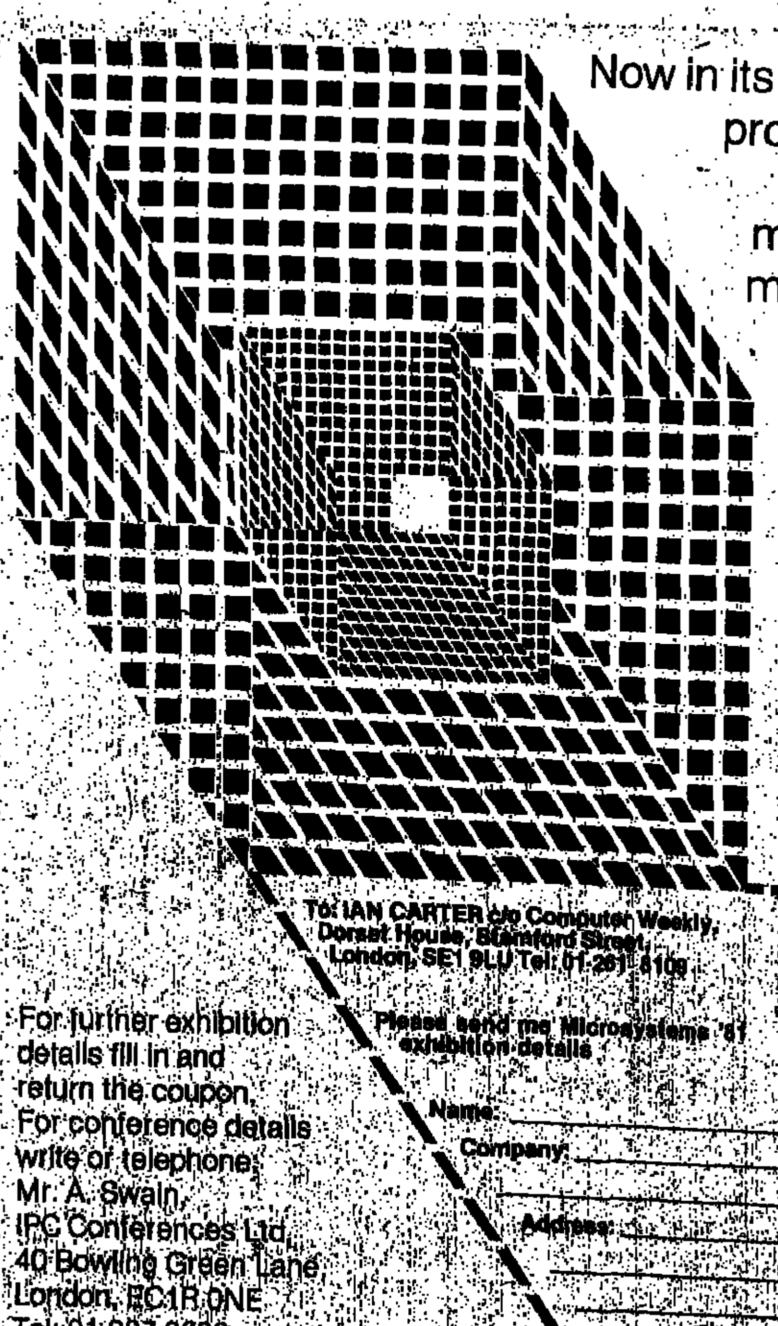

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It also meets the ECMA ... ISO standards, says Feedback ... and incorporates a ... locking mechanism and ... mounted in either the ... or vertical planes. An ... control panel is also avail...

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Data Dynamics Ltd (CW) ... Data House, Springfield ... Hayes, Middlesex. Tel: ... 9781.

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ISA (CW), 80-84 Th... Road, Bradford, West ... shire. Tel: 0274 306787.

Single card plug-in bubble memory board for TM990s

A SINGLE card plug-in bubble memory board called the TM990/210, that provides up to 69K-bytes of non-volatile storage for systems using the Texas Instruments TM990 series is available from Celdis.

The maximum storage capacity of the board approaches that of a single density mini floppy disc.

The TM990/210 uses the TIB02023 92K-bit bubble memory devices which have been shown to exhibit a failure rate of 0.0001% per 1,000 hours at 50°C and at a 60% con... level.

The board shows a ... time of 4 millisecond ... transfer rate of 50K-bit ... second in either page or ... page mode.

The TM990/210 is avail... capacities of 23, 46 ... bytes indicated by ... number suffixes ... —3. Prices start from ...

Celdis (CW), 37 Loverock Road, Reading, ... 0734 582211.

Analogue/digital converter

AN 8-BIT analogue/digital converter with microbus compatibility for systems design is available from Jermyn Distribution.

Called the ADC 0801/2/3 and 4 Naked-8 from National Semiconductor, the devices allow operation directly on the 8080A control bus.

Naked-8 converters can be interfaced to other microprocessor systems including the Z80 and 6800 series. The voltage reference input can be adjusted to allow the full 8 bits of resolution to be applied to the smaller input voltages.

Prices are £15 for one, ... for two, £25.52 for three ... £28.40 for four.

Jermyn Distribution, ... Vestry Estate, Sevenoaks ... Tel: 0732 50144.

Brochure

A BROCHURE showing ... various overhead hopper ... pensing systems for ... packaging infill material ... available. It lists addresses ... Flo-Pak's distributors ... free.

Flo-Pak UK (CW), ... Road, Brackley, NN13 ... 0280 703161.

A TWO-PAGE REVIEW OF SOME OF THE LATEST PRODUCTS ON THE MARKET

Hard copy unit for VDUs

VIDEO terminals with "video out" can now be connected directly to the Tektronix 4632 hard copy unit which also offers improved copying of non-interfaced signals from sources such as the Digital Equipment VT105 terminal.

Connected via the RS170 interface, each raster line of graphic or alphanumeric information is expanded to enable copies to be produced in seconds, says Tektronix.

The 4632 can also provide copies of grey scale information with five discernible levels as standard and up to 11 optionally and can be used for medical applications. A multiplexer is also available to share the copier between up to four video terminals.

Tektronix UK Ltd (CW), PO Box 69, Harpenden, Herts. Tel: 05827 63141.

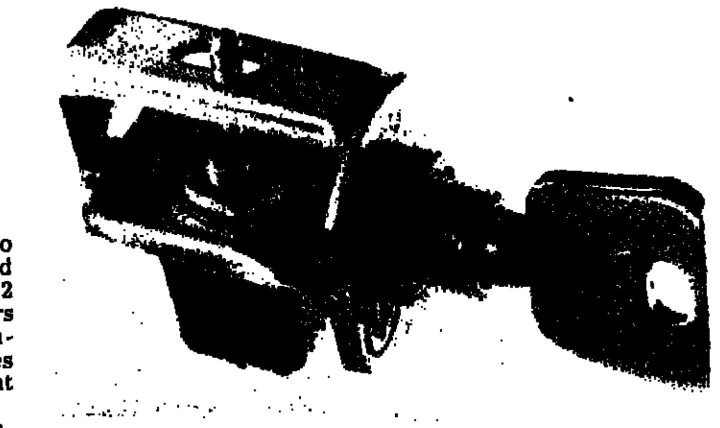
Battery backup

A BATTERY backup unit on a single board that is said to maintain power to the central processor unit and memory of a Data General Eclipse during a power failure, has been launched by the firm.

It is designed for Eclipse S/250, C/350 and M/600 systems, and a report from the US IEEE says the backup unit will support the computer for two minutes.

The unit is 7 x 27 inches and weighs 81 pounds. It mounts in the chassis next to the CPU and is wired into the CPU's bus bars. It is air cooled and requires no separate AC power.

Data General Corp (CW), 724-734 London Road, Hounslow, London, TW3 1PD. Tel: 01-572 7455.


The CNK key operated switch for low to medium security applications. It is available from P. Caro & Associates.

Security switches are key operated

A RANGE of key operated switches, called the CNK series, available from P. Caro & Associates of Birmingham, are intended for low to medium security applications wherever circuitry interlocks or isolation are required.

The operating key is removable in all positions to prevent accidental or inadvertent operation.

The switch units comprise a plated steel support frame to which can be mounted a one, two or three pole toggle switch. The key is nickel plated brass and a chrome plated knurled nut is provided for clamping.

A ⅝-inch diameter hole is required for mounting, says the firm, and can be drilled on a panel up to ¼-inch thick. An anti-rotation peg should also be provided to ensure mounting stability.

Overall dimensions, included operating key in position, are 2.255 x 1.378 x 0.75 inches.

Maintained, momentary or centre switch operations can be provided with ratings of 6 amps at 125 volts or 3 amps at 250 volts AC.

A free leaflet is available and the key switches cost between £2.86 and £3.06.

P. Caro & Associates Ltd (CW), 2,347 Coventry Road, Birmingham, B26 3LS. Tel: 021-742 1328.

Eight channel data comms board

FROM National Semiconductor is a data communications board that can provide up to eight independently programmable RS 232C compatible channels for communications expansion on board level computers.

Designated BLC-8538, the board is based on the 2651 USART and a four channel version, BLC-8534, is also available, says Natsemi.

Under user control, each channel can have either synchronous or asynchronous transmission, can have individual data formats or parity, has 16 software programmable baud rates up to 19,200 bits per second or external inputs, and can have special transmission functions such as SYNC insertion or SYNC search for synchronous communications.

Natsemi adds that each channel can have two maskable interrupts (one input and one output), double buffering for full duplex transmission and individual parity error detection.

The system's CPU communication with the board is via standard Intel 8080A and 8085 memory reference and input/output commands.

Natsemi also has available the interface hardware to connect the communications boards to the outside world in either a Natsemi RMC chassis or a Retma cabinet.

For an RMC chassis, the BLC-8958 4-port connector boards and the RMC-A001 back panel replacement (which holds one or two BLC-8958s) provide the 26-pin RS 232C interface. The BLC-8958-1 and the AEE-001 provide interfaces for the Retma cabinet.

The communications boards are multibus compatible and are guaranteed for one year.

National Semiconductor (UK) Ltd (CW), 301 Harpur Centre, Horne Lane, Bedford. Tel: 0234 47147.

Call priority unit needs no PO connections

A CALL priority unit that has no electrical connections with Post Office equipment and allows users to answer calls in strict rotation, has been introduced by Cole Electronics of Croydon, Surrey.

Based on a Zilog Z80 chip, it can handle up to 15 key and lamp units on one master priority indicator. The indicator unit consists of a master electronics package, which can be placed behind or underneath the key and lamp unit KLU. Ten and 20 line versions are available and the unit is optically coupled to the KLU.

Only the first line awaiting answer is indicated by a flashing LED in the appropriate position, says Cole. Individual lines can be switched out of the priority system. In this case the indicator repeats the state of the Post Office lamp.

Price for a master unit handling six key and lamp units is about £1,000.

Cole Electronics Ltd (CW), 105-... Lansdowne Road, Croydon, CRO ... Tel: 01-680 8507.

Addressable I/O board

AN ADDRESSABLE input/output board that will accept up to 16 OPTO-22 input/output modules is available from Rapid Recall. Called the Pamux, the board is designed to interface a microcomputer to industrial plant machinery.

Pamux features on-board mechanical switches, allowing each board to have an individually selectable address. This enables up to 64 boards to be multiplexed to a single microcomputer input/output port via a daisy chain cable.

The OPTO-22 optically coupled input modules are of a standard size and are plugged into the Pamux board. An LED status indicator is provided on the board for each module, and modules can be removed and replaced without disconnecting any wiring. It costs £169.

Rapid Recall (CW), Denmark Street, High Wycombe, HP11 2ER. Tel: 0494 26271.

Sprocket-driven guillotine

THE Bowe 305 is a sprocket-driven guillotine which can cut computer print out into forms between 4 and 12 inches deep. It has adjustable margin trimmers and can be fitted with three centre cutting blades. The perforations in the stationery can be removed by strip cutting.

Performance varies between 2,000 and 6,650 forms per hour.

The Bowe 405 is a sprocket-fed decollator that can separate up to 4-part continuous computer stationery. Operating speed is variable from 0.2 to 1.3 metres per second and up to 600 fold positions can be accommodated. The 405 can also be fitted with margin trimmers.

The guillotine costs £2,795 and the decollator is priced at £1,795.

Alcars (CW), Iveagh Ave, North Circular Road, London, NW10 7UJ. Tel: 01-965 9311.

Automated call answering

AN AUTOMATED call answering facility, the Intertel DA 300, has been approved for use over Post Office lines and can be used with Data Logic's Intertel range of modems.

The DA 300 is available as a plug-in option on a board and operates in conjunction with an Intertel modem including those operating at 1,200 and 2,400 bps, or any EMS-One network management system.

The facility can be configured to operate at either attended or unattended communication sites.

The DA 300 mounts into and draws power from any Intertel stand alone modem enclosures for remote operations, or the SR2 option rack for central site operation. It measures 13.9 x 3.1 inches. Prices start at £360 per unit.

Data Logic (CW), 29 Marylebone Road, London, NW1. Tel: 01-486 7288.

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SYSTEM 90 is a trademark of Bunker Ramo Corporation

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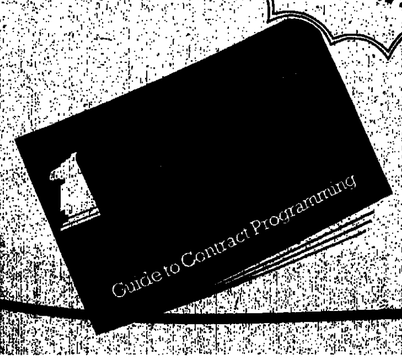

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(2519)

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University of Manchester Regional Computer Centre
Director: Professor G. Black

UMRCC is a national centre providing a general service to over thirty universities in the United Kingdom. This is currently based on two Control Data 7600 computers each front ended by an ICL 1900. A CDC CYBER 170/720, accessed by over a hundred terminals, provides an interactive computing service to Manchester users.

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JBA

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We have been retained by an organisation to recruit a number of computer staff to be involved in the development of a major international system. The system will become one of the corner stones of our client's worldwide manufacturing/engineering activities during the 80's. Use of on-line, data comms, and data base is implicit in the envisaged plans.
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c. £8,500

To play an innovative role in the development of one of the sub-systems which will make up the total project. The need to undertake some international travel is likely to be a feature of the work.
Applicants should have at least 4 years computing experience including a period in programming preferably in an IBM environment with the main emphasis on systems design and development.

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If you wish to apply or require further information please contact:

Bev Stevens
JAMES BAKER ASSOCIATES,
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Gateway House, 50 High Street,
Birmingham B4 7SY.
Tel: 021-643 7865

(2573)

SYSTEMS PROFESSIONAL

The Daresbury Laboratory, located in the Cheshire countryside, is developing major national facilities for research into atomic, molecular and biological sciences, nuclear physics and computational science.

The Laboratory, which operates an extensive network of computers, ranging from PDP-11 and Perkin-Elmer (Interdata) mini-computers to a large IBM 370/165 and CRAY-1, is looking for an experienced

SYSTEMS PROGRAMMER

to join the Accelerator Control Group of the Nuclear Structure Facility Division.

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CLOSING DATE: 2nd October 1980

Please write, or telephone Warrington (0925) 65000, Ext. 467, for an application form quoting reference DL/751/CW to —

The Personnel Officer
DARESBURY LABORATORY
Science Research Council
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(2538)

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SDA

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SYSTEMS PROGRAMMER

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Previous experience of VME/B is desirable but not essential.

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Further details and application forms may be obtained from: The Director's Secretary, Oxford University Computing Service, 13 Banbury Road, Oxford OX2 6NN. Telephone: (0865) 56721.

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(2532)

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Applications are invited from suitably qualified persons, regardless of sex, race or national origin for appointment to positions in the Division of Computer Science. Permanent positions at various levels are available and applications for contract of visiting positions are also welcome. The University will normally contribute towards travel expenses.

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Intending applicants should obtain the information sheet relating to these positions as well as the general information sheet which will also give information on the lower cost of living and lower rates of taxation in South Africa from the London Representative, University of the Witwatersrand, 278 High Holborn, London WC1, or from the Registrar, University of the Witwatersrand, Jan Smuts Avenue, Johannesburg 2001, South Africa. Applications should be lodged with the Registrar not later than 4th October, 1980.

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BERKSHIRE	Software Progs 1-4 yrs exp real-time. Coral or Macro or Pascal or Assembler	to £8.000
BERKSHIRE	Software Analysts 1-5 yrs exp real-time Coral or Macro or Assembler	to £9.000
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HAVANT	Analysts. 1-5 yrs exp. manufac. or finan. CICS/DL1	to £8.000
W SUSSEX	Analysts 1-5 yrs exp. Systems Design. insurance or finan.	to £8.500
W. SUSSEX	Project Leaders, 2-8 yrs exp Systems Design, manufac. ability	to £9.500
SWINDON/WILTS	Analysts. 3-5 yrs exp Commercial Systems Design., management capabilities	to £11.000
BASINGSTOKE	Analysts, 1-4 yrs. exp manufac or finan. Database TP	to £8.000
BASINGSTOKE	Snr Analysts, 2-8 yrs exp. finan. or manufac. Database TP	to £9.500
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BASINGSTOKE	Operators ICL 2900; 1-5 yrs exp 3-shift systems	to £5.600
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For full details of these and other opportunities write or telephone (24 hour answering service. We are open Saturday mornings until 12 noon) Agency

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(2461)

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required for Finance Company in E.C.4. to maintain current systems and take a major role in the installation of a new computer in 2 years' time with the development of an on-line system. If you have at least 5 years computer experience (preferably including N.C.R.) of which at least 2 have been in Systems Analysis, we would like to hear from you.

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Analysts with general financial background, and some knowledge of database products required by major DB and DB Systems suppliers based in Berkshire. Mobility is of prime importance for visiting UK clients.

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PDP 11 experience is of particular interest to this International Systems Group operating in Holland, Germany and France. In-depth knowledge of operating systems and software tool advantageous. Relocation assistance offered.

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Mini Assembler

Programmers Analysts Consultants

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Software Engineers and Team Leaders required for design and development work at our Client's new Swiss office. Specific requirements are knowledge of quality assurance techniques, or telephone/telecomms systems, plus project management experience. Good German a considerable asset. Relocation package offered.

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Word Processing Supervisor

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However we have committed ourselves to an accelerated and wide ranging programme of mechanisation and automation which could lead to rapid computerisation in every appropriate area of the Postal Business.

Hence, we can now offer several very attractive openings at Team Leader level; and all in Central London.

What you can expect.

Project work at its best. You will manage projects from feasibility studies through development planning, systems design, equipment purchase and system assembly to programming and subsequent implementation and operation.

Your experience widened. Working with our spread of installations — NCR, Burroughs, Honeywell, Olivetti and others — can only strengthen your professional background and experience.

A chance to break new ground. You will help to create systems for new areas of computer applications.

What we ask for.

As an experienced programmer and/or systems analyst you must have at least 3 years experience, preferably in the mini computer/distributed computing field with COBOL background. You must enjoy working in a flexible environment, and relish the chance to develop your existing expertise and acquire new techniques. You must show yourself capable of motivating and guiding others. You should have a degree or equivalent qualification. Although based in London some travel will be involved.

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The Post Office (2884)

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PARIS

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SYSTEMS PROGRAMMERS

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2 years in word processing
2 years' Assembly Programming
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Fluency in French not necessary. Permanent positions with rapidly growing company.

Ring Trelbert Ltd. on 0628 23532 any time

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Anal/Prog (COBOL)	Isleworth	£9,000 + car
Systems Analyst	Slough	To £9,250
Systems Analyst	Kingston	£9,000
Systems Analyst	Alperton	£8,500
Prog (ASSEMBLER)	Nr. Gatwick	£8,500 neg
COBOL Programmer	Southall	To £8,250
Business Anal (RPG11)	Wembley	£8,000 + car
Systems Analyst	Redhill	To £8,000
Prog (MINI)	Nr. Gatwick	£6,500
Prog (ASSEMBLER)	Crawley	£6,500 +
COBOL Programmer	S.W.16	£6,500

If you are interested in any of the above positions, please phone for an Application form or send in your full CV.

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£6,000+ PROGRAMMER HEREFORDSHIRE W294
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12-18 months' COBOL experience, knowledge of RPGII an advantage. Developing on line facilities.

£Neg. PROGRAMMERS WILTS W283
18 months+ COBOL experience on Honeywell equipment.

Up to £8,000 SYSTEMS DESIGNER CHELTENHAM W260
2 years' minimum ICL 1900 experience as either systems analyst or systems programmer. Little user contact.

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Consultant: Hazel Foggin.

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At least 3 years' COBOL programming experience ideally on Honeywell hardware.

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Consultant: Roger Car.

HELP!

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Signed: Bob Male, General Manager.

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Experienced analysts with commercial applications background and preferably programming experience.

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An experienced man manager to control a team of 18. Development of strategic plan, staff development, user liaison.

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To lead a team working on advanced management accounting and financial modelling techniques.

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To expand and maintain a communications network, evaluate software and upgrade hardware — preferably UNIVAC under OS/3.

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1-3 years' BASIC programming experience. RIII or RSTS/E. Bureau environment. Commercial applications. New office accommodation.

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2 years + COBOL preferably mainframe. Commercial and financial applications. New hardware recently installed.

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Experience of ICL COBOL is required. Financial/Commercial applications. Insurance Company. Excellent fringe benefits.

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(2883)

Recruitment LOGISTIX in Informatics

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Germany: Salary to £17K

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Ref. L/36/A

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Gtr. London Suburbs: Salary to £12K

A leading Systems Supplier situated on the rural outskirts of London has requested **LOGISTIX** to identify and recruit the following personnel:

PROGRAMMERS/DESIGNERS: Suitable candidates should have a degree in a numerate subject and practical programming experience in either Assembler or Coral 66. Our client's in-house training programme will enhance your programming skills and develop your applications knowledge. You will work as a member of a small team designing, coding and testing real time applications software to meet in-house user specifications.

PROJECT LEADERS/MANAGERS: Candidates with proven ability as a Software Engineer or Designer in real-time applications are sought for Project Leader and Project Manager positions. It is particularly advantageous to have had experience in a similar role and to be conversant with resource management tools and user interfaces. However, candidates with the necessary software expertise and a real desire to combine innovative technical skills with a career in management will certainly appeal to our client.

THE BENEFITS: In addition to a superior salary our clients offer a comprehensive range of ancillary benefits, including relocation/legal expenses, temporary accommodation allowance, pension scheme, and health/medical facilities.

Ref: L/36/B

Banking Systems Specialists

S.E. Asia: PKG. to £20K

One of the most dynamic business environments in the World has recently witnessed the creation of a Systems and Software Consultancy specialising in financial applications. The Company urgently requires Consultants, Analysts and Designers to assist on a long-term, government-sponsored financial project. Not less than 5 years' exposure to on-line Banking or financially-orientated systems is required for all positions. Consultants should, additionally, be able to demonstrate supervisory experience gained during the development of at least one medium to large computer system. Familiarity with SNA and DB concepts is essential. Preference will be given to applicants for the Analyst/Designer vacancies who have had a substantial programming background in either COBOL or, preferably, APL. Such challenging positions are, naturally, well rewarded, with relocation costs, accommodation allowance and a substantial basic salary combining to present a very attractive package.

Ref: L/36/C

Oil & Exploration Systems

Central London: Salary to £12K

A "household name" Company participating in oil production and exploration activities on a global basis seeks additional project team members for its Central London installation. The Company currently runs IBM mainframes with non-homogenous mini-computers in an on-line and stand-alone capacity. Applications Programmers and Systems Analysts should offer commercial experience in a T.P. or DBMS environment. More important than specific programming langunges used are the applications areas in which candidates have previously worked. Programmers and Analysts will be considered to have relevant skills if they have programmed or designed in the areas of: Sales forecasting/budgetary applications, seismic and cartographic data analysis, production and materials control and spare parts/order scheduling. Salaries and fringe benefits are exemplary and will appeal to career orientated professionals.

Ref: L/36/D

Office Automation

Greater London: Salary to £10K

A market leader in the areas of office automation and information science technology has an urgent requirement for Systems Programmers. Suitable candidates will be graduates with a minimum of two years' Assembler or Pascal programming experience. Those who have developed a mini-computer or micro-processor Operating System or who have had recent exposure to SNA will certainly be attractive to our client. You will work as a member of a small project team developing State-of-the-Art Software with particular emphasis on electronic mailing, text and word processing. As well as excellent career prospects your financial benefits will exceed those paid by most other comparable companies.

Ref: L/36/E

(2856)

Logistix, 10 Grenville Place London SW7 4RW

01-373 3063 LOGISTIX Telex: 28800

Senior Consultants
Industry/Computing
London based **to £18,000**

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Hardware/Software
N. Home Counties **c. £10,000**

Our client wishes to recruit an experienced team leader who will have an up-to-date mix of hardware and software skills. The person appointed will be responsible for a team of engineers and programmers, with duties ranging from new product introduction to product maintenance. Relocation assistance where applicable.

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Mini Computer Business Systems
City based **c. £10,000**

This is a very attractive position within a very prestigious management consultancy. Prospects for career progression are excellent. Candidates must be degree level, or equivalent, with experience in financial and business applications, preferably at minicomputer level. You will be part of an expanding small team, quick to learn and capable of matching client needs with package specifications.

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Micros
Herts. **c. £8,500 + car + bonus**

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A. SENIOR SYSTEMS DESIGNER
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Candidates for Post C should have had relevant experience and a good educational background.

Application form and job description may be obtained from the Personnel Officer, Greater Glasgow Health Board, 351 Sauchiehall Street, Glasgow, G2 3HT, to whom completed forms should be returned not later than Monday, September 15, 1980. (2552)

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ANALYST/PROGRAMMERS
c£7600

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The main computer systems supported comprise an IBM-370/148 running DOS/VS and an IBM 4331 running VM/370. Plans are being finalised to convert the DOS/VS system to DOS/VSE on a 4 megabyte IBM 4341.

Candidates should have at least 2 years' experience of using COBOL under DOS/VS. In addition some analytical experience and exposure to DB/DC Software, preferably TOTAL and Environ/1, would be desirable.

We can offer excellent working conditions, flexible hours, subsidised staff restaurant and 22 days holiday per annum.

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(2626)

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PACKAGE TO £12,500+

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If you have a detailed knowledge of computer power supply problems, some sales exposure and, ideally, European experience please write, providing a brief c.v. or preferably, telephone me for an early interview.

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Applications or enquiries from graduates qualified for an SRC grant should be made to: Professor [illegible] Department of Computer Science, University College London, Gower Street, London WC1E 6BT. Tel: 01-387 7050 [illegible]

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Reference CW91/1.

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(DR1906) 2+ yrs manufacturing	7000	2

PROGRAMMERS

(DR1907) 18+ months COBOL	6250	2
(DR1908) 2+ years COBOL	8500	3
(DR1909) 3+ years COBOL	7000	3

Contact Susan Stuart

Nottinghamshire

ANALYSTS

	£	No. of vacancies
(DR1910) 2+ years commercial	7000	6
(DR1911) 4+ years (seniors)	7750	5

PROGRAMMERS

(DR1912) 2+ years COBOL	8500	5
(DR1913) 4+ yrs (seniors) COBOL	7500	6

Contact Susan Stuart

Staffordshire

ANALYSTS

	£	No. of vacancies
(DR1914) 2+ years commercial	8500	3
(DR1915) 4+ years (seniors)	8000	2

PROGRAMMERS

(DR1916) 2+ years PL/1	8500	7
(DR1917) 2+ years COBOL	8500	2
(DR1918) 4+ yrs (seniors) COBOL	7500	2

Contact Susan Stuart

Greater Manchester

ANALYSTS

	£	No. of vacancies
(DR1919) 12+ mths commercial	8000	5
(DR1920) 2+ yrs manufacturing	7000	5
(DR1921) 3+ years financial	7500	4
(DR1922) 4+ years (seniors)	8000	2

PROGRAMMERS

(DR1923) 12+ months COBOL	6500	16
(DR1924) 2+ years COBOL	8500	8
(DR1926) 3+ years COBOL	7000	6
(DR1926) 4+ yrs (seniors) COBOL	7500	5

Contact Cathy Scott

Merseyside

ANALYSTS

	£	No. of vacancies
(DR1927) 12+ mths commercial	6000	6
(DR1928) 2+ years production	6700	4
(DR1929) 3+ years financial	7250	5
(DR1930) 4+ years (seniors)	8250	2

PROGRAMMERS

(DR1931) 18+ months COBOL	6500	9
(DR1932) 18 months IBM ASSEMBLER	7000	2
(DR1933) 3+ years COBOL	7250	5
(DR1934) 4+ yrs (seniors) COBOL	7500	4

Contact Cathy Scott

Lancashire

ANALYSTS

	£	No. of vacancies
(DR1935) 12+ mths commercial	6000	2
(DR1936) 18+ months financial	6500	2
(DR1937) 2+ years manufacturing	7000	2
(DR1938) 3+ years commercial	8000	2

Lancashire

PROGRAMMERS

	£	No. of vacancies
(DR1939) 12+ months COBOL	6500	3
(DR1940) 18+ months COBOL	8250	3
(DR1941) 2+ years COBOL	6700	4
(DR1942) 3+ years COBOL	7200	4

Contact Cathy Scott

Yorkshire

ANALYSTS

	£	No. of vacancies
(DR1943) 12+ mths commercial	8500	3
(DR1944) 18+ months financial	6800	4
(DR1945) 2+ years retail	7300	4
(DR1946) 3+ years commercial	7750	5

PROGRAMMERS

(DR1947) 12+ months RPGII	8500	2
(DR1948) 18+ months COBOL	6250	5
(DR1949) 2+ years COBOL	6500	4
(DR1950) 3+ yrs (senior) COBOL	7200	5

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Humberside

ANALYSTS

	£	No. of vacancies
(DR1951) 2+ years manufacturing	6750	2
(DR1952) 3+ years commercial	7500	2

PROGRAMMERS

(DR1953) 18+ months IBM ASSEMBLER	6500	2
(DR1954) 3+ years COBOL	7000	2

Contact Cathy Scott

Cambridgeshire

ANALYSTS

	£	No. of vacancies
(DR1955) 12+ months financial	8500	2
(DR1956) 3+ yrs commercial IBM	8500	2

PROGRAMMERS

(DR1957) 12+ months PL/1	6250	2
(DR1958) 2+ years COBOL	8500	3
(DR1959) 3+ years systems programmers IBM	7000	2

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APPOINTMENTS IN IRELAND

Shortage of skilled personnel in Eire's booming electronics

by Sean Bedford

Sean Bedford was born in Dublin and has spent 40 years in the Irish public service, mainly with the Irish Revenue Commissioners where he was collector general of taxes for 17 years until March this year, when he joined IMPC Ireland. As Collector-General of Taxes he was responsible for the designing and implementation of an integrated computer system to automate the administrative structure, and he established a Revenue Computer Centre. He is senior consultant, special projects for IMPC Ireland, providing advice in the computer and related fields.

DESPITE the dark economic clouds hanging over Europe these days, there is one particularly bright star in the sky as far as Ireland is concerned, and that is the booming development in its electronics industry. The outlook for employment is buoyant and the only restricting factor is a shortage of highly skilled and experienced people.

During the past three years Ireland has been experiencing a spectacular growth of activity in the computer and electronics field. This has been due mainly to the setting up of industries here by foreign manufacturers; also, the availability, at relatively low cost, of an increasingly wide range of computer facilities, particularly microprocessors, and the recognition, in continental Europe especially, that we have people in Ireland who could be developed technically for the production of high class computer software.

Because of the efforts of the Irish semi-state body, the Industrial Development Authority (IDA), a number of the top 100 US electronics firms are already established in Ireland.

These include General Electric, Digital, Westinghouse, Memorex, Varian, Beckman, Amdahl, Leeds & Northrup, Data Products, Data 100, Bell & Howell, and several recent additions are:

Prime Computer Inc has set up a subsidiary in Dublin (Prime Computer Ireland) for the manufacture of minicomputer systems. Employment in due course will be almost 300.

Wang Laboratories is setting up in Limerick to produce computer systems, word processing systems and related peripheral devices. Employment will reach 1,600 when fully developed.

Amdahl, already established in Dublin for two years, has announced plans to double employment there to 400, bringing total investment in plant and equipment to £6.3m. One-third of the additional 200 jobs will be filled by highly skilled and professional staff.

The increase in job approvals by IDA electronic projects rose from 1,600 in 1976 to almost 9,000 in 1979, with a capital investment of £141.3m. In 1976 electronics accounted for 8.9% of total job approvals; in 1979 it was more than 20%. It is forecast that employment in the electronic manufacturing sector will more than double within the next five years, and will be one-third of all new jobs created during that period.

Sophisticated

While currently most of the electronics manufacturing activity in Ireland is effectively assembly and component work, it is becoming increasingly recognised that this base of technical experience can and must be used for the development within the country of more sophisticated electronic and allied products.

There is plenty of scope for the exercise of entrepreneurial skills. One instance is the opportunity to set up computer software houses. Some firms have already seen the advantages to be gained from locating research and software development bases in Ireland: the availability of suitable manpower (subject to adequate training), competitive salary levels by Continental standards, and excellent government aided export facilities. Ireland has a growth rate in computer services double that of Western Europe and the potential is virtually unlimited.

Euroco International, Turnkey Systems Inc and Doonex are recent examples of such enterprises in the software field. These three companies alone will provide 171 jobs, of which 146 will be for skilled people.

There are at present 90 foreign companies in the Irish electronics industry, employing 11,500 people. It is estimated that by 1985 this total will have increased to 25/30,000, with an associated output valued at £1,250m, and that over one-third of this labour force will be in the professional/skilled categories.

There is a current identifiable demand for at least 200 computer programmers a year over the next three years and there is a chronic shortage of programmer technicians, according to the Confederation of Irish Industries.

At present 100 electrical engineers and 200 electrical technicians graduate each year from universities and technological colleges. Plans are being implemented to raise this to 200 and 320 a year respectively by 1983.

Investment

Substantial investment is being made by the Irish government in the related educational field, including the provision of £1m for a wafer fabrication laboratory, the provision of £1m for a microelectronic research centre in University College, Cork, and the establishment in the National Institute of Higher Education in Limerick of a centre to investigate the application of integrated circuits.

The availability of highly trained personnel is central to the development of electronics in Ireland.

At present there are not enough people in Ireland with the necessary training and matching experience to meet the technical demand, especially at systems analyst, programmer, electronic engineer and technician level.

An influx of skilled personnel, including in particular expatriates, would help to bridge the gap until the momentum of development would result in the catching up of experience with training in home-produced technical staff for the electronics industry.

There are, therefore, many attractive job opportunities in the computer and electronics industry at present available for those who might find Ireland an attractive place to work.

The attractions are quite worthwhile. Firstly the remuneration available for skilled computer people is conservatively regarded as more than favourable when compared with similar levels in the UK.

There is ample scope for personal career development in this expanding sector of the Irish economy, and this is probably the most opportune time to get in on the ground floor.

The environment is pleasant and has a great deal to offer to family people. Many of the enterprises are sited in towns with picturesque hinterlands, such as Cork and Galway. Most are in close proximity to universities or regional technological colleges.

Relocation grants are available through the Irish National Manpower Services which help to minimise the cost of moving to Ireland.

Analog Devices B.V., based in Limerick City with over 300 employees, is a leading designer and manufacturer of high technology integrated circuits used in the manufacture of precision control systems.

Experienced

RPG II PROGRAMMER

£7,000 +

with a desire to participate in systems analysis and design.

Candidates, male or female, should have two to three years programming experience with a minimum of one year in RPG II.

Working with a small but rapidly growing department, utilising an IBM System 34, the successful candidate will participate in the design and programming of new manufacturing and financial applications including a real time integrated work-in-progress/standard costing system, real time order entry system and a purchasing/MRP package.

We offer an attractive salary (£7,000+ for the right candidate), a comprehensive benefit programme which includes a success sharing bonus plan and generous relocation allowances where appropriate.

Please write to or telephone (reverse charges) for further information to:

Personnel Manager,
Analog Devices B.V.,
Raheen Industrial Estate,
Limerick.
Tel. 061-29011

OR: Maurice Johnston,
Placement Officer,
National Manpower Service,
O'Connell St., Limerick.
Tel. 061-43300

ANALOG DEVICES

GALLAHER (DUBLIN) LIMITED

have a vacancy for a

SYSTEMS ANALYST

Gallaher (Dublin) Limited, situated at Tallaght in a south-western suburb of Dublin is part of a major international company, engaged in the manufacturing and marketing of tobacco products, including such well-known brands as Benson & Hedges, Silk Cut, Mellow Virginia, Hamlet, etc. We have recently upgraded our Data Processing facilities to a Honeywell 62/60 mainframe with 384K Memory, 120 MB Disk Storage, and 600 LPM Printer using GCOS and Transaction Processing through VDU's. We now wish to expand our D.P. Staff and require an experienced Systems Analyst.

Ideally, candidates should have a professional qualification or a degree equivalent preferably related to Computer Science, Mathematics or related areas. Significant D.P. experience may be acceptable. Applicants should have good analysis experience coupled with a COBOL programming background. They must be able to demonstrate that they have played a senior role in the design and implementation of at least one major system.

Salary and fringe benefits for this position are attractive. Applicants should, in the first instance, send a detailed curriculum vitae to:

The Personnel Manager, Gallaher (Dublin) Limited, Virginia House, Greenhills Road, Tallaght, CO. DUBLIN

to arrive not later than Friday September 19th 1980.

(2541)

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We are looking for self-motivated people who enjoy challenging work, like dealing with people and who are looking for a job with a broad perspective.
Salary and conditions of employment are excellent and a very generous relocation allowance is payable. We also operate a pension scheme and a health insurance scheme for you and your family and first class opportunities for career development exist within the corporation, both in Europe and the U.S.
If you satisfy the above criteria and you are interested in joining a company that offers outstanding opportunities, wide ranging development and growth then we are anxious to talk to you. Interested applicants should write, including a telephone number where you can be contacted, or phone for an application form to:

Mike Guilfoyle, Personnel Department,
DIGITAL EQUIPMENT INTERNATIONAL LIMITED,
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Phone (052) 22055.

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Irish Airports

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A minimum of 3 years experience of commercial or financial systems including successful implementation of several projects and a programming background using COBOL are required for this position.

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A minimum of 5 years Operations experience with a medium to large scale installation functioning in a Distributed Processing environment and preferably having had management responsibility for such an Operations Unit.

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To apply, write, giving full details of age, training, work experience and other relevant details, to:
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Head Office, Dublin Airport,
or,
Mr. Denis J. Hayes, Placement Officer,
Professional and Executive Recruitment Section, National Manpower Service,
Department of Labour,
O'Connell Bridge House, Dublin 2.
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DIGITAL EQUIPMENT INTERNATIONAL, Ballybrit Industrial Estate, Galway, Ireland. Tel: Galway 7661.

UMRCC

University of Manchester Regional Computer Centre
Director: Professor G. Black

UMRCC is a national centre providing a general service to over thirty universities in the United Kingdom. This is currently based on two Control Data 7600 computers each front ended by an ICL 1900. A CDC CYBER 170/720, accessed by over a hundred terminals, provides an interactive computing service to Manchester users.

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Closing date: 14 days from the appearance of this advertisement.

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COMPUTER WEEKLY

DP Opportunities in Banking and Insurance

Special Feature September 11 Issue

The September 11 issue of Computer Weekly — Britain's largest circulated computer publication — will contain a special feature outlining the career opportunities and employment prospects open to data processing personnel in banking and insurance.

Computer Weekly is the only publication to regularly publish editorial features covering a variety of subjects linked to the job market scene. In view of the continuing shortage of qualified DP Personnel, the need to create a greater awareness amongst readers of the scope and future career prospects available is all important.

The combination of this special editorial feature and Computer Weekly's large penetration amongst analysts, programmers and operations staff, provides a first class recruitment advertisement platform.

Computer Weekly has the largest circulation in the specialist computer press (91,656 ABC July-Dec 1979). This has increased continually over the years to reflect the ever growing number of personnel in the computer industry. Additionally, and equally important, the newspaper has the highest number of individually requested copies of any weekly computer publication.

Advertisement rates are based on £16.00 per scc, and to be sure of your space reservation in this important issue, advanced reservations are advisable. Copy deadline is September 8th.

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(2589)

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Applications (one copy only), including the names and addresses of three referees should be sent to the Registrar and Secretary, the University, Sheffield S10 2TN, from whom further particulars may be obtained, the applications to arrive before 15 September 1980. Quote ref. R504/B8

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Further particulars and application forms may be obtained from the Secretary General, Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF, or from the Recruitment Section, Secretary's Office, University of Hong Kong, Hong Kong.

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(2550)

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(2632)

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Ring Ray Kelly for further details on 01-261 8016.

THE SALES BIT

Qualifying for management

LAST week I wrote about the differences between the responsibilities and activities of a sales manager and those of a salesman.

This week I would like to make some recommendations to salesmen who aspire to entering sales management. However, in doing so, I must emphasise that I do not claim to be an expert on sales management techniques. I simply refer to my own experience and the world of selling as I find it.

Perhaps you will identify significant omissions in my coverage of the subject or have profoundly different opinions. If that is the case, I sincerely hope you will write and tell me so.

Compatible

A salesman's qualification for entering sales management is not a direct function of his track record of sales success. Being the company's top salesman is no more of a qualifier than it is a disqualifier. The primary qualifications for advancement from territory sales into management are:

- The opportunity has been earned by virtue of successfully completing the tasks that have been set to date.
- The individual's human characteristics are compatible with the demands of the job. (This evaluation should involve both subjective and objective analysis as well as considering past behaviour.)

20 questions

Having considered the initial qualification the salesman needs to give close consideration to several facets of his personality and performance before committing himself to the pursuit of a management role.

1. Does he without exception always work in the best interests of his employer?
2. Can he work without supervision?
3. Does he respond constructively to being managed himself?
4. Is he receptive to new ideas?
5. Is he creative in the context of business, new products and human relationships?
6. Has he regularly achieved his selling targets?
7. Is he aware of the absolute need for profitability in the context of both new and existing business situations?
8. Can he motivate people, as opposed to simply getting along with them?
9. Does he instinctively evaluate all business situations from every viewpoint?
10. Is his judgment positive and reliable?
11. The real art of management is achieving success through other people. Is the salesman capable of that or does he insist on doing everything himself?
12. Does he fully understand his company's total product range, its markets and its national and international operational mechanism?
13. Does he avoid selling any of the company's products? If so, how is he effectively to persuade all other people to sell the total range?

Stable?

14. Is he emotionally stable? How would he stand up to the emotional and physical rigours of the job?
15. Is he prepared to put in the additional time which may be implied by the promotion?
16. Could he make a real contribution to the existing management team?
17. Has he made any conscious effort to prepare himself for management?
18. Has he discussed the possibility with his direct superior and perhaps discovered any reservations on the company's part?
19. Could he cease to be "one of the boys"?
20. Could he handle the "loneliness" of the job?

These questions need to be addressed with absolute honesty. In fact, it might not be too far from the mark to suggest that for every "No" the chances of qualifying for sales management decline exponentially.

TRADER

Database for Eurocrats

THE European Conference on Evaluation and Implementation of Database Systems is to be held in Brussels on September 25-26. The language of the conference will be English. The conference is expected to attract manufacturers of hardware and software, user groups and Eurocrats. Topics to be covered include data dictionary systems and database administration. It is organised by the Commission of the European Communities, and further information can be obtained from Dalin Shanni, SDR Associated, Avenue des Abeilles, 16 1050 Brussels. Tel (02) 647 8780.

Puzzle Answer

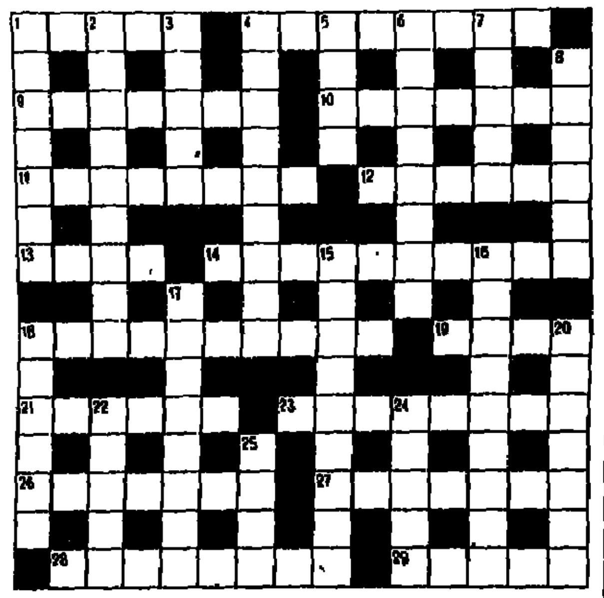
THE first throw must obviously produce one number for certain, and the second will produce a different number in five cases out of six (or, on average, in 6/5 throws). A third number has four chances out of six of appearing on the next throw (or, on average, in 6/4 more throws).

Putting this another way, the number of throws needed, on average, will equal 1 (for the first number), + 6/5 (for the next number), + 6/4 (for the third number) ... and so on. The complete equation for all six numbers to appear, on average, is accordingly $1 + 6/5 + 6/4 + 6/3 + 6/2 + 6/1 = 882/60 = 14.7$ throws.

CW Prize Crossword No 8

Compiled by Alec Robins

A PRIZE of £10 will be awarded for the first correct entry opened. The second and third correct solutions opened will receive £5 each. Entries to Crossword Competition, Computer Weekly, Dorset House, Stamford Street, London SE1 9LU, by first post Friday, September 12. Please use a ballpoint to complete the crossword.



Name .... (Miss, Mrs, Ms, Mr)

Address ....

....

Telephone ....

I accept the rules and conditions of the Computer Weekly Crossword Competition.

Signed .... Date ....

ACROSS

1. Clergyman fails to finish front page of leaf (5)
4. Excessively confident lot of deliveries sent down, we hear (8)
9, 5. Relax on parade to tolerate a tantalising person (5, 2, 4)
10. Cheat and twist Liberal in the Kent area (7)
11. Special homes for workers giving a religious sign (8)
12. Bird allowed around the hostelry (6)
13. An eagle will settle in a higher nest (4)
14. Just leaving with one that's beautiful (4, 2, 4)
18. Wife's prudent advice to one ordering a pint before driving? (6, 4)
19. A couple you've to knock back around one (4)
21. Irritated about the doctor being gloomy (6)
23. Mashed spud, free, sprinkled with liquid (8)
26. To dribble is a knack exhibited by the French (7)
27. One vehicle brought back by an outer-space character (7)
28. Uncle's making humble tools of others dance (8)
29. Garment for lady doctor? (5)

DOWN

1. Blushing girl gets tucked in (7)
2. A varied recital on an old musical instrument (9)
3, 4. Honour the ablutions roster? (5, 2, 3, 4)
5. See 9
6. Sheriff's officers are indisposed, getting blows all round (8)
7. Left a Middle-Eastern port with cargo aboard (5)
8. Main shopping area? There's little money about (6)
15. Realistic plan offering assistance to the poor upset Pamela (6, 3)
16. Water, needed for a mother pig (5, 4)
17. Baker's looking odd in a furry hat (8)
18. Surrounds and defeats, capturing enemy's leader (6)
20. Dishonestly manipulates, without uproar, divisions of land (7)
22. This is a girl, or I'm a clown (5)
24. Animated, having been sacked (5)
25. To become engaged will make yours truly shut up! (4)

Rules and Conditions

1. Each competitor may submit no more than one entry.
2. The competition is open to all readers of Computer Weekly with the exception of the staff of IPC Business Press Ltd, any printers employed by them or the near relatives of any such staff.
3. The solution of each puzzle will normally be published in the issue three weeks after the puzzle has been published.
4. Winners will receive their prizes during the month following the competition.
5. The decision of the editor on the interpretation of the rules and conditions and on all matters relating to the competition shall be final. No correspondence will be entered into.

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COBOL Programmer

Hampshire **to £7500**

Our client is a leading, successful manufacturer of agricultural equipment. Their requirement is for programmers of any length of experience. The machinery is ICL and the language COBOL, and candidates should have knowledge of both. Excellent opportunity to progress into team leadership. Company benefits include a subsidised restaurant, life assurance and pension schemes, and 23 days' annual leave. REF. 4496

Programmers

Middlesex **c. £7500**

A very well-known household named company, whose reputation is envied, seeks programmers to complement their existing team. The company needs people with two years' experience of on-line working with COBOL. A useful addition would be a working knowledge of CICS, but this is not essential as training will be given. Benefits include a company bonus (c. 2 weeks' salary), 5 weeks' holidays and subsidised company products. REF. 4405

COBOL Programmer

West London **£7000**

Expansion has meant that this well-known bureau to the West of London is looking for a COBOL programmer with around eighteen months' experience in a wide range of commercial applications. Univac hardware is used and a wide range of company benefits is offered, which includes a yearly bonus, LVs and substantial discount on goods offered by the parent company. REF. R4509

FORTRAN Programmers

Central London **£8000**

We have two clients with current vacancies for experienced FORTRAN programmers. Both companies require at least two years' experience with an engineering or telecommunications background, one of the companies being involved in petro-chemicals and the other a large software house and bureau. Both companies offer a comprehensive range of benefits and represent fine opportunities for suitably qualified applicants. REF. R4521/8

Analyst/Programmer

S.W. London **£8000**

A manufacturing company in S.W. London require a skilled and communicative person to supplement their existing team. The applicant should have three to four years' experience in a high level language such as BASIC or COBOL, and should be familiar with communication networks. DEC hardware is used and the company's range of benefits include four weeks' holiday, good insurance and pension schemes and a subsidised restaurant. REF. R4514

BASIC + /BASIC + 2 Programmers

City **£7500**

We are in contact with three banks in the City who are seeking programmers with upwards of eighteen months' experience in BASIC +, BASIC + 2, or AIMS. Successful applicants can expect to be working in a batch and real-time environment on applications such as foreign exchange and eurobonds. Opportunities for career progression are excellent and the employment packages offered are without equal. REF. R/GEN

The above vacancies are only a small selection from those currently on our files and we are always delighted to talk to experienced systems and programming staff wishing to further their careers.

Datascene International Limited,
Sceptre House,
169-173 Regent Street,
London W1R 7FB. Telex: 25851.
01-439 7871
24 hour answer-phone

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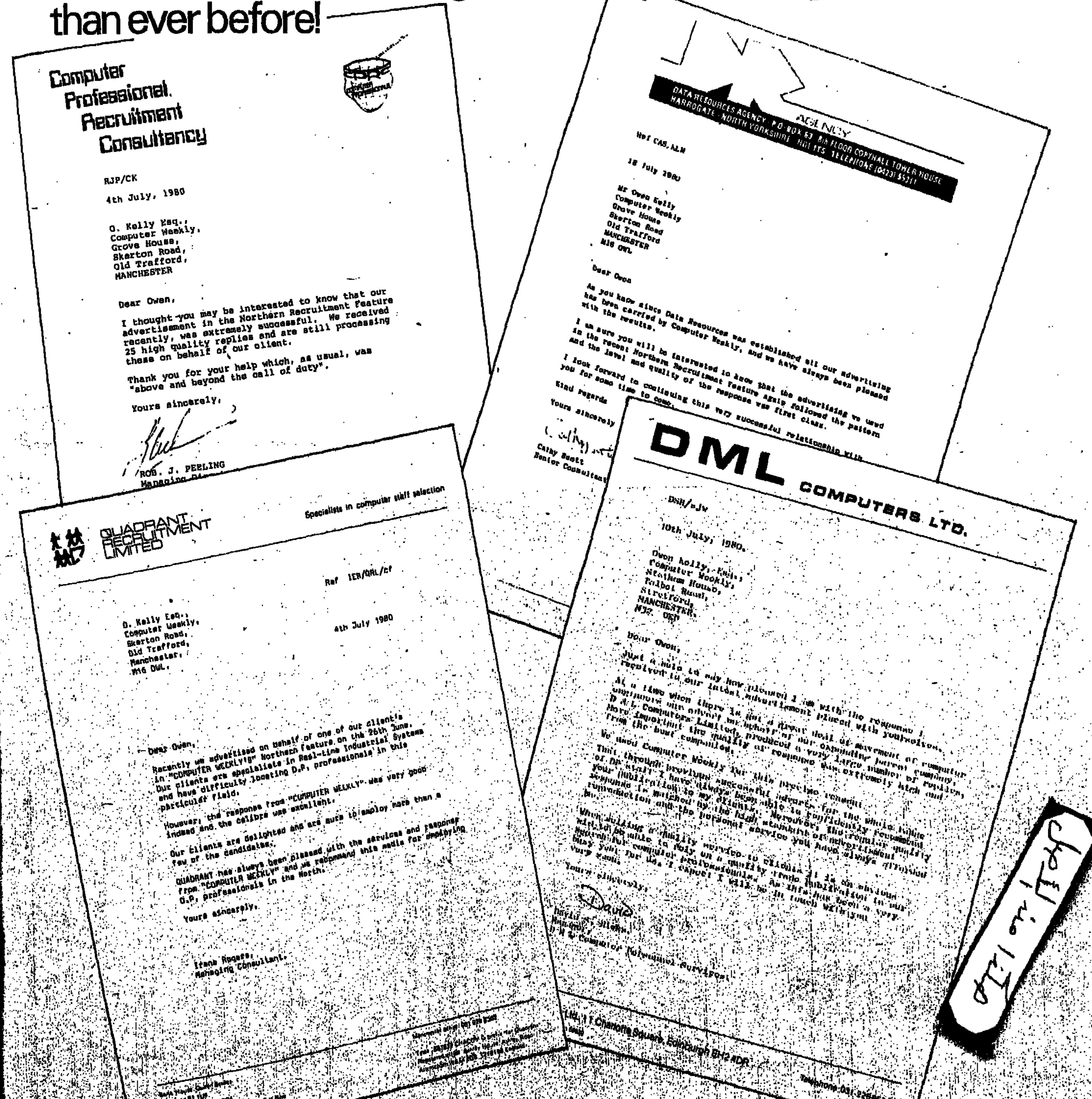

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